

BRITISH COLUMBIA DEPARTMENT OF LANDS

FOREST SERVICE

HON. WILLIAM R. ROSS, K.C., Minister of Lands

British Columbia Timber for Prairie
Farms

FARM HOUSES

FARM BUILDINGS SERIES

BULLETIN No. 10



THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA.

VICTORIA, B.C. :

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1916.

BRITISH COLUMBIA

LUMBER, SHINGLES

and other products of

Douglas Fir

Western Larch

Mountain Western Pine

Western Red Cedar

Western Hemlock

Spruce

Western White Pine



British Columbia Timber for Prairie Farms.

FARM HOUSES.

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The LUMBERING INDUSTRY OF BRITISH COLUMBIA.

TO THE PRAIRIE FARMER.

In the forests of British Columbia there stands to-day more than half Canada's supply of commercial timber. Forest surveys made during recent years throughout the Province show 30,000,000 acres of timber ready for the market, and 45,000,000 acres of younger growth that will reach commercial size during the present century. The present merchantable stand is estimated at 400,000,000,000 feet board measure.

Taught by the experience of older countries, British Columbia has adopted a vigorous conservation policy and is carefully protecting her vast forest areas from fire and misuse.

The manufacture of lumber and other wood products is the most important industry of this forest Province. Each year 1,500,000,000 feet of timber is cut to supply the sawmills, pulp and paper mills, and other wood-using factories west of the Canadian Rockies. But the forests produce more wood each year than the mills can find markets for, and so much timber goes to waste. The most of the timber is public property; the prosperity of the Province depends very largely upon the lumbering industry; and it is therefore the duty of the Government to help secure the widest possible market for British Columbia lumber both in foreign countries and in Canada.

The main market for Western lumber to-day is in the Prairie Provinces of Canada. Each farm is, after all, a factory for agricultural produce and needs a well-built plant like any other factory. This means good buildings—a comfortable, convenient house, good barns, granaries, silos, fences, and shelter for machinery. The best material for this is wood. It is cheap, handy to use, warm, sanitary, and it lasts. British Columbia therefore desires to give the citizens of Alberta, Saskatchewan, and Manitoba full information concerning her forest products, asking them to bear in mind that these products are “grown and manufactured in Canada,” and that trade between the

Provinces of the Canadian West is the surest foundation for our common prosperity.

The Bulletins.

Valuable bulletins on farm buildings are now being issued by agricultural authorities all over Canada and the United States. The College of Agriculture of the University of Saskatchewan was engaged in this most useful work; the Government of British Columbia entered into a co-operative agreement with the University, and the series of farm bulletins listed on the last page of this booklet is the result. The agricultural information contained herein and the plans and bills of material were prepared under the immediate supervision of Mr. W. J. Rutherford, Dean of the College of Agriculture, and thus give up-to-date and authoritative views on the agricultural subjects dealt with. The information concerning lumber is supplied by the Forest Service of the Government of British Columbia.

In the building plans, five things are aimed at in particular:—

- (1.) That they should be specially designed to meet Prairie conditions.
- (2.) That they should be simple and practical to meet the needs of the average farmer.
- (3.) That ordinary stock sizes of lumber should be used throughout in order to keep the cost low.
- (4.) That it should be easy for the farmer to make additions to the buildings whenever more accommodation should be needed.
- (5.) That the details of the plans should be readily alterable to suit individual needs.

The plans printed in these bulletins show enough detail for them to be used as working plans. Any one wishing to obtain large-scale working plans can secure them at cost by writing to the **Chief Forester, Victoria, B.C.** A reference list of bulletins and of sources of agricultural information will be found on the last page.

Note.

While it is understood that the agricultural authorities in Alberta and Manitoba have already published pamphlets on farm buildings, and contemplate issuing others, it is believed that all Prairie farmers will be interested in the British Columbia bulletins, and editions for general distribution on the Prairies have accordingly been printed.

UNIVERSITY OF SASKATCHEWAN,
COLLEGE OF AGRICULTURE,
WALTER C. MURRAY, *President*. W. J. RUTHERFORD, *Dean*.

HOUSES FOR PRAIRIE FARMS.

BY A. R. GREIG, PROFESSOR OF AGRICULTURAL ENGINEERING, AND L. B. BEALE, BRITISH COLUMBIA FOREST SERVICE.

PLANNING THE HOME.



THE house, the centre of all the activities of the farm, is the most important of all its buildings, and its planning and construction should receive a corresponding amount of care, even if it is to be only a temporary structure. Too often, unfortunately, the reverse is the case, and the house, usually the first building put up, is the least carefully planned and the last to be improved or rebuilt.

Ideas on planning a house probably vary more than in any other kind of building, and it is therefore the least capable of standardization. There are, however, certain general principles which any plan must follow to secure the greatest comfort and convenience. Some of the main points to be considered are briefly given below. It is understood, of course, that these are intended to be of a very general nature only, and must always be modified by individual conditions and circumstances.

Site.

The home will be most convenient if it is easily accessible from the highway, and is centrally located, so that all parts of the farm can be reached without difficulty and as far as possible with equal facility. This will save time in going from the house to the fields, a matter that is especially appreciated at very busy times of the year. The site should have good drainage. If possible, it should command a good view of all parts of the farm. It is hardly necessary to say that the barnyard should not form a prominent part of this view, though it may be included in it. Plenty of room should be left for

future improvements in the shape of trees, shrubs, lawn, etc., which add so greatly not only to the appearance but also to the value of a farm. An inexpensive house set in attractive surroundings looks better than an expensive and elaborate house without them. A southern exposure is desirable for the front of the house, in order to give it all the light and sun possible, especially in winter; but in any case the best outlook should always be selected.

Interior Arrangements.

Convenient, labour-saving arrangement of the interior is even more important in a farm-house than a city house, because the housekeeper on the farm has, as a rule, more work to do—work which often includes duties in addition to the care of the house itself.

As the house is the most important building, so the kitchen is the most important room. As a rule, a large part of the work is done there, and it has been aptly called the workshop of the home.

The size of the kitchen will depend largely on its uses. It should be primarily a cook-room, and the tendency in the larger modern farm-houses is to have a comparatively small, compact kitchen, used chiefly for the preparation of food, and a separate dining-room. Very often, however, especially in small houses, the kitchen must serve also as a dining-room, living-room, wash-room, laundry, etc., and in such cases must be made correspondingly larger.

The kitchen should be light and pleasant to work in, both summer and winter. It is desirable to have it placed either in a corner of the house, or else in a narrow part, where it can get light and ventilation from two sides, with one side preferably facing east to let in the morning light. The windows and doors should be placed to get full advantage of the light and air. Dust from a road and odours or flies from the barnyard must, of course, be avoided.

The different articles forming the kitchen equipment, such as stove, sink, work-table, cupboards, refrigerator, etc., should be arranged in positions most convenient to each other, and to the pantry and dining-room, to avoid unnecessary walking; and, furthermore, they should be fixed at the proper working heights above the floor to suit the person who will use them; the proper height for a work-table, for example, will generally vary between 32 and 36 inches. If the refrigerator is built into the wall, so that the ice can be put in from the outside, it is easier to fill, keeps the dirt out of the kitchen, and in winter it can

be used as a refrigerator without ice. Where the winters are severe, it is advisable to have the sink against an inside wall rather than an outside one, so it will be less likely to get frozen.

The floors, walls, and ceiling should be plain, smooth, and easy to keep clean. For the floor it is desirable to use one of the harder woods, as Western Larch, Douglas Fir, or Western Hemlock, preferably edge-grain stock, and to oil it periodically after it is laid. Wood finish, such as V-joint, or good plaster are suitable for the walls and ceiling; wood finish is easier for the unskilled person to put up, and is therefore specified in some of the houses shown in this bulletin.

The pantry, dining-room, wash-room, cellar, and wood-shed are the rooms most used in connection with the kitchen, and they should therefore be located conveniently to it and to each other.

A wash-room off the kitchen, with a sink, and if possible a toilet too, where the men coming in from the fields can clean up and leave their coats, hats, overalls, etc., will be found a great convenience, as well as a great help in keeping the kitchen clean. It could also serve as a laundry.

The store-room or shed for fuel should be close by the kitchen, and if possible on the same floor-level.

The pantry or store-closet should be placed where it will be handy both to the kitchen and dining-room. Sometimes a pantry is put between the kitchen and dining-room, but this is objectionable, because it increases the distance to be travelled in serving meals. As a rule, it is preferable to have the pantry located in the kitchen or opening off it.

A basement or cellar is not essential unless a furnace is to be installed, but it is very useful for many purposes, such as storing vegetables for use in the kitchen. It should have an entrance from the kitchen or the wash-room; it is also convenient to have an entrance from the outside.

The dining-room should be at least 11 feet wide, and preferably larger, in order to leave room around the table for serving meals. If it is used also as a living-room, additional space ought to be provided, and also a fireplace if possible. It should have direct communication with the kitchen with a door between swinging both ways, and fitted with a glass panel to avert collisions. A labour-saving arrangement than can often be used to advantage is a sliding panel or window, with a shelf on each side, at a convenient height in the wall between the kitchen and the dining-room, through which dishes, etc., can be passed.

It is a good plan to have a separate entrance to the dining-room from the outside through the wash-room or lobby, so that the men after they wash can go directly in to the table without using the kitchen as a passage-way.

The old custom of having two rooms, one used as a living-room for the every-day use of the family, and the other as a parlour, unused except for company and Sundays, is being abandoned. The modern plan is to have a living-room only, and to make that a real family club-room, as large, comfortable, and cheerful as possible. South or west, or both, is the most desirable exposure for this room. If it can be provided with plenty of windows, a wide fireplace, books, and comfortable furniture, it will immensely increase the comfort and attractiveness of the home.

A farm-house generally needs more bedrooms than a city house, and it is important to plan it so as to take full advantage of all the space, at the same time avoiding very small rooms, which are uncomfortable and undesirable. All the bedrooms should, of course, be well ventilated and lighted, and also should be provided if possible with closets, which are preferable to movable wardrobes. A bedroom on the ground floor within easy reach of the kitchen is very convenient for young children or invalids who require attention during the day. Where hired men are to live in the house, it is desirable for the sake of family privacy that their bedroom should be shut off from the others, and should have a separate stairway, leading, for example, out of the wash-room.

Space should always be left for a bath-room if possible, even if it is not practicable to fit it up at first. The toilet may be placed in the bath-room, though it is often preferable to have it separate. All plumbing should be protected from frost by placing it against inside walls or by other means; it should also be left exposed or open, so that it can easily be reached and kept in working-order. The question of sewage-disposal is discussed in another part of this bulletin.

If an office is included in the house, it should be adjacent to the front or back entrance, so that it will not be necessary to take visitors through the other rooms.

To ensure comfort in winter the house should be built of non-conducting materials in the warmest possible manner. The building-paper should be well lapped and carried under all casings. If a furnace is installed, it should be placed as nearly as possible in the

centre of the basement in order to give the best results, and the flue or chimney for it should be located accordingly.

All rooms on the same floor should be on the same level if possible; changes in level necessitate steps, which are a never-ending nuisance.

The windows should be placed chiefly on the south, east, and west sides. It is usually better to have two or several small windows advantageously placed in a room than a single large one. It is desirable to have at least one window in one of the principal rooms command a good view of the farm buildings.

In buying doors, windows, furniture, and fittings, etc., it is advisable to get stock or standard-sized articles, simple and unpretentious in style, but the best that can be afforded in quality. Well-made doors and windows and good fastenings cost but little more than poor ones, and will last much longer, look much better, and give infinitely more satisfaction.

HOUSE PLANS.

The six houses shown in this bulletin have been very carefully planned, and will, it is believed, meet the needs of many prospective house-builders, though, of course, it is not to be expected that they will suit everybody. In designing them the object has been to embody, as far as the limitations of size and cost would allow, the various desirable features mentioned above; to combine convenience, economy, and good appearance; and to show representative houses of different types, varied in size and cost to suit different conditions. The first four are all very moderate in cost, while the last two (Nos. 5 and 6) are better finished, and therefore cost proportionately more; but they are also more attractive.

Farm House No. 1.

This small one-story house is designed for the new settler or small farmer who wishes to secure reasonable accommodation at the minimum of cost. It is the cheapest and most simply constructed house shown in the bulletin; yet it can be made into a very comfortable home, and when something better can be afforded, this will prove very useful for housing the farm help.

The outside measurements are 22 x 24 feet, and there is accommodation for a family of four or five. The kitchen, used also as living-room and dining-room, is 12 x 16 feet, and is fitted with sink, kitchen cabinet, and cooler for food; there is also ample space for the table, seats, and stove. It is entered from the front through the lobby

and from the back through the wash-room, thus having no doors opening directly to the outside, a feature that will be appreciated in very cold weather. Two good-sized bedrooms, each 10 feet 6 inches x 11 feet, open off the kitchen. The front entrance lobby is fitted with hat and coat rails, and the wash-room adjoining the back entrance is fitted with a strong table and shelving (*see Bill of Material*). If a cellar is desired it can be easily constructed under the kitchen, and approached by a step-ladder through a trap-door in the floor.

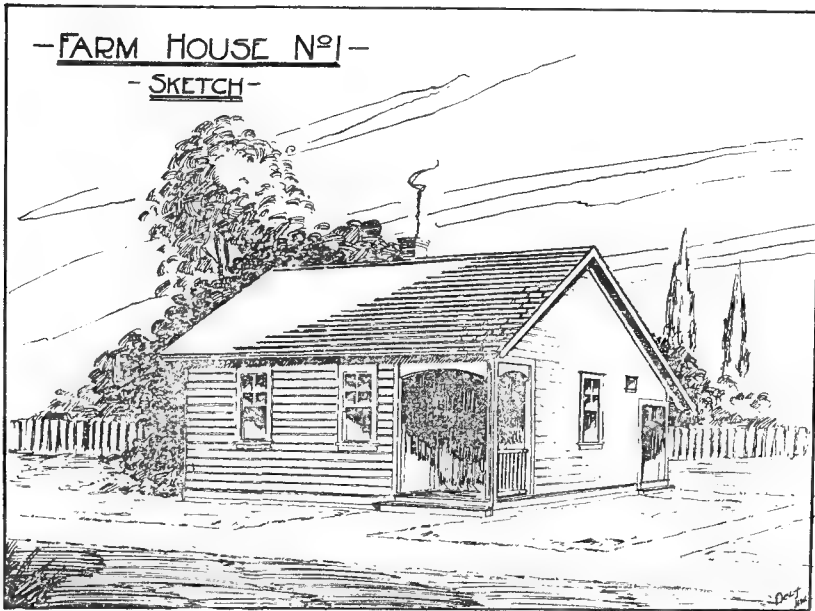


Fig. 1. A small one-story house designed for the new settler or small farmer who wishes to secure reasonable accommodation at the minimum of cost.

The construction of the house is very simple. The 6- x 6-inch bearers are blocked level on field-stones or concrete piers, with 2- x 6-inch floor-joists on the bearers. The wall-studs are 2 x 4 inches x 8 feet, which with plates and sills makes the height of the rooms 8 feet 6 inches. The walls are covered on the outside with shiplap, tar-paper, and siding. The inside is lined throughout with 1-inch V-joint and shiplap, so that no plastering is necessary. The floors are built of 1-inch T. and G. Fir or Larch on shiplap, with a layer of tar-paper between. The kitchen cabinet, cupboards, and the draining-

SCALE -



3

BILL OF MATERIAL, FARM HOUSE NO. 1.

Framing Lumber.

No. of P'cs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
1	6	6	14	42	Bearers under floor-joists blocked level on stone or concrete piers.
8	6	6	12	288	
11	2	6	18	198	Ceiling-joists over kitchen.
1	2	6	16	16	Ridge-pole.
1	2	6	14	14	Ridge-pole.
20	2	6	12	240	Ceiling-joists over bedrooms.
51	2	6	8	408	Joists.
11	2	6	6	66	Ceiling-joists over front porch and lobby.
10	2	6	6	60	Joists under wash-room and back porch.
1	2	6	4	4	Binder on ceiling-joists over kitchen.
30*	2	4	16	320	Sills and plates.
12*	2	4	16	128	Extra studs at doors and windows.
6	2	4	16	64	Studs, end wall; 16" centres.
8	2	4	14	75	Studs, end wall; 16" centres.
42	2	4	14	392	Rafters; 18" centres.
6	2	4	12	48	Collar-ties.
12	2	4	12	96	Studs, end wall; 16" centres.
4	2	4	10	27	Studs, end wall; 16" centres.
70	2	4	8	373	Studs, front wall, back wall, and partitions.
12	2	4	8	64	Rafters on wash-room and back porch; 18" centres.
8	2	4	8	43	Studs for wash-room; 16" centres.
7	2	4	6	28	Studs for wash-room; 16" centres.
Total framing lumber				2,994	

Finish Lumber.

1	6	6	8	24	Front porch post.
1	6	6	8	24	Front porch beam.
1	6	6	6	18	Back porch post.
2	3	6	8	24	Front porch post.
1	2	12	10	20	Table-top in wash-room.
1	2	6	6	6	Handrail for front porch.
3	2	4	6	12	Rails to balusters, front and back porches.
1	2	4	12	8	Bearers for wash-room table.

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE NO. I—*Concluded.**Finish Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
15	2	2	6	30	Balusters, front and back porches, to cut 30 pieces.
1	1	12	12	12	To cut out shaped fascia to front porch.
1	1	8	16	11	Louvre vent to cooler.
4	1	8	14	37	Fascia at gables.
1	1	8	14	9	Frieze at eaves.
3	1	8	12	24	Frieze at eaves.
2	1	8	8	11	Fascia at gables.
2	1	6	14	14	Ridge cover-boards.
4	1	6	14	28	Frieze at gables.
5	1	6	10	25	Corner-boards.
3	1	6	8	12	Corner-boards.
21	1	6	8	8	Risers, front porch steps.
2	1	6	8	8	Frieze at gables.
3	1	6	6	9	False beam, front porch.
2	1	6	6	6	Risers, back porch steps.
2	1	5	14	12	Ridge cover-boards.
5	1	5	10	21	Corner-boards.
3	1	5	8	10	Corner-boards.
12	1	4	14	56	Door-casings.
5	1	4	10	17	Window-casings inside.
5	1	4	6	10	Window-casings inside.
1	1	4	10	3	Skirting around wash-room table.
6	1	4	6	12	Door-casings.
4	1	4	10	13	Hat and coat rails.
Total finish lumber				534	

1,150 feet, board measure, 1" shiplap on inside of wall-studs.

1,550 feet, board measure, 1" shiplap on outside of wall-studs.

750 feet, board measure, 1" shiplap on floor-joists.

300 feet, board measure, 1" V-joint for eaves and overhang of roof at gables.

2,600 feet, board measure, 1" V-joint lining to all inside walls and ceilings (excepting wash-room) and for kitchen cupboards.

1,700 feet, board measure, siding.

800 feet, board measure, 1" T. and G. flooring.

900 feet, board measure, 1" roof-boardings, laid close.

8,750 British Columbia Red Cedar edge-grain shingles (35 bundles).

14 lineal feet 1½" x 10" treads for front and back porch steps.

400 lineal feet 1" quadrant mould at junctions of wall and ceilings and wall and floor.

60 lineal feet 4" x 4" eave-gutter.

110 lineal feet water-table.

18 lineal feet window-stool, in 6' lengths.

100 lineal feet 1" x 12" for shelving, draining-boards, and cupboards.

12 rolls of tar-paper.

- 5 sashes, 2 lights, check-rail windows; outside size 2' 4" wide by 4' 6" high, upper sashes divided into 4 lights each; and 5 sash-frames with sills and outside casings for 8" wall.
- 1 sash, 4 lights, 12" x 12"; outside measurement 2' 4½" wide by 2' 4½" high; and 1 sash-frame with sill and outside casing for 7" wall.
- 4 doors, 2' 6" x 6' 6"; and 4 frames for 5½" walls.
- 1 door, 3' x 6' 6"; and 1 frame for 5½" wall.
- 1 front door, 3' x 6' 6", upper panels glazed; and 1 frame for 8" wall.

Hardware.

- 60 lb. 4" common nails.
- 85 lb. 2½" common nails.
- 25 lb. 2½" flooring-nails.
- 40 lb. 2" flooring-nails for siding.
- 70 lb. 2" finish-nails.
- 45 lb. 1¼" shingle-nails, best-quality galvanized, zinc-clad, or cut iron.
- 1 thimble for flue-pipe.
- 9 pairs 4" T-hinges for cupboard in kitchen and wash-room sash.
- 6 pairs door-hinges.
- 5 sash-fasteners.
- 5 sets of lines and weights for fasteners.
- 1 spring-bolt for wash-room sash.
- 2 cupboard-door catches.
- 5 cupboard-door latches.
- 6 sets door-locks and trim.
- 1 sink, 30".
- 10 lineal feet 1½" waste-pipe for sink.
- 20 lineal feet 3" rain-water pipe.
- 2 shoes and 2 18" offsets for rain-pipe.
- 2 dozen hat and coat hooks.
- 16 lineal feet sheet-metal flashing, 18" wide, to go around chimney.
- 600 brick for chimney.
- 3 bushels lime for chimney.

Farm House No. 2.

The feature of this house is the large accommodation it gives for a very moderate outlay, and it is intended for the farmers to whom those two qualities appeal. It is about the same in size and capacity as House No. 5, but is simpler in design, plainer in finish, and will cost correspondingly less.

There are two stories and a basement. The outside size is 28 x 31 feet, and there is ample room for a family of eight or ten persons.

The basement is situated under the kitchen and office and one corner of the living-room. It is reached by stairs from the kitchen. Bins for coal are provided, and the positions of the rain-water tank and the hot-air furnace are indicated.

The kitchen, 18 x 13 feet 6 inches, is entered from the wash-room or living-room. It is fitted with a sink with draining-boards (cupboards

underneath), a kitchen cabinet, and shelving. Either the kitchen or the living-room may be used as a dining-room.

The wash-room is 12 x 9 feet 6 inches in size and is located between the kitchen and back entrance. It is equipped with a table under the window, and a sink with draining-boards and cupboards. The toilet opens off this room.

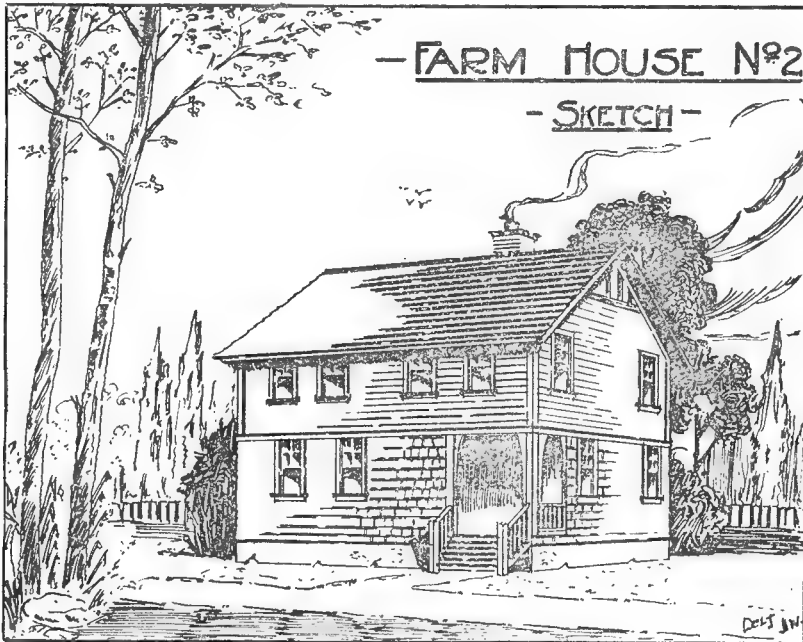


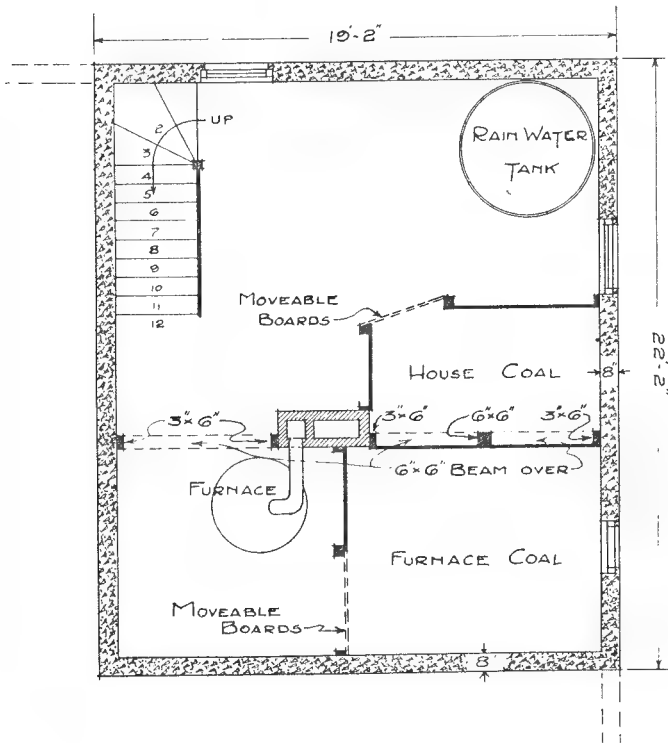
Fig. 4. The feature of this house is the large accommodation it gives for a very moderate outlay, and it is intended for the farmers to whom those two qualities appeal. It is suitable for a family of eight or more.

The living-room, 18 x 13 feet 6 inches, is of good size, well lighted, and can be made very comfortable. The room opening off it will be found convenient for a bedroom, nursery, or office. The lobby in front is useful to hang coats, etc., in, and it also helps to keep the living-room warm.

On the second floor, the stairs to which lead out of the kitchen, there are two large bedrooms in front and two smaller ones behind. One of the latter is for the hired man; it is reached by a separate stairway from the wash-room, and does not communicate with the rest of the

FARM HOUSE N° 2 .

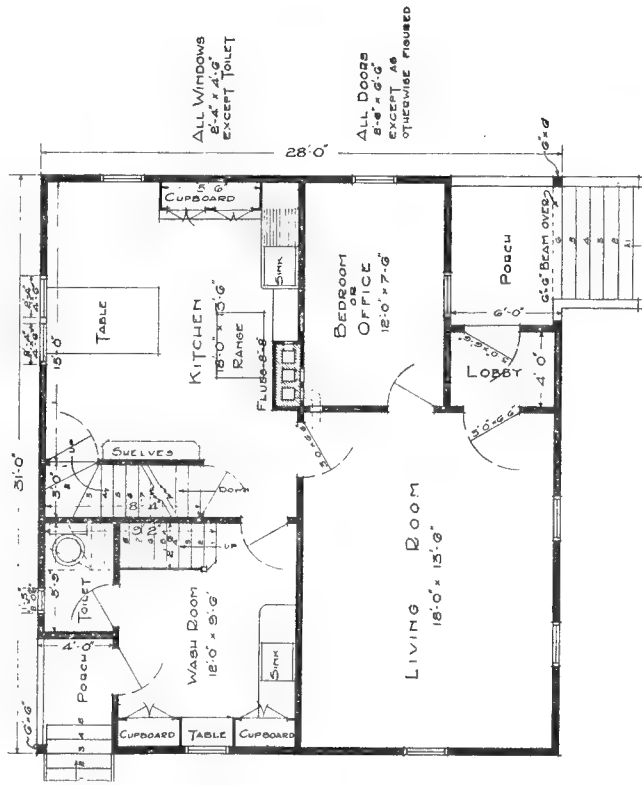
SCALE - 0' 2' 4' 6' 8' 10' 12' 14' 16'



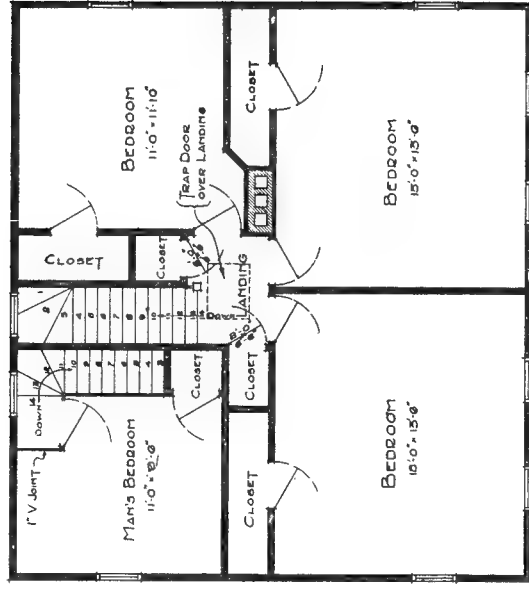
BASEMENT PLAN
UNDER KITCHEN & OFFICE

Fig. 5. The basement is reached by stairs from the kitchen. Bins for coal are provided, and the positions of the rain-water tank and the furnace are indicated.

SCALE:-



GROUND FLOOD PLAN



..SECOND FLOOR PLAN.

Fig. 6. The rooms are of good size, well lighted, and can be made very comfortable. The arrangement of the kitchen and the wash-room is especially convenient.

• FARM HOUSE N^o 2 •

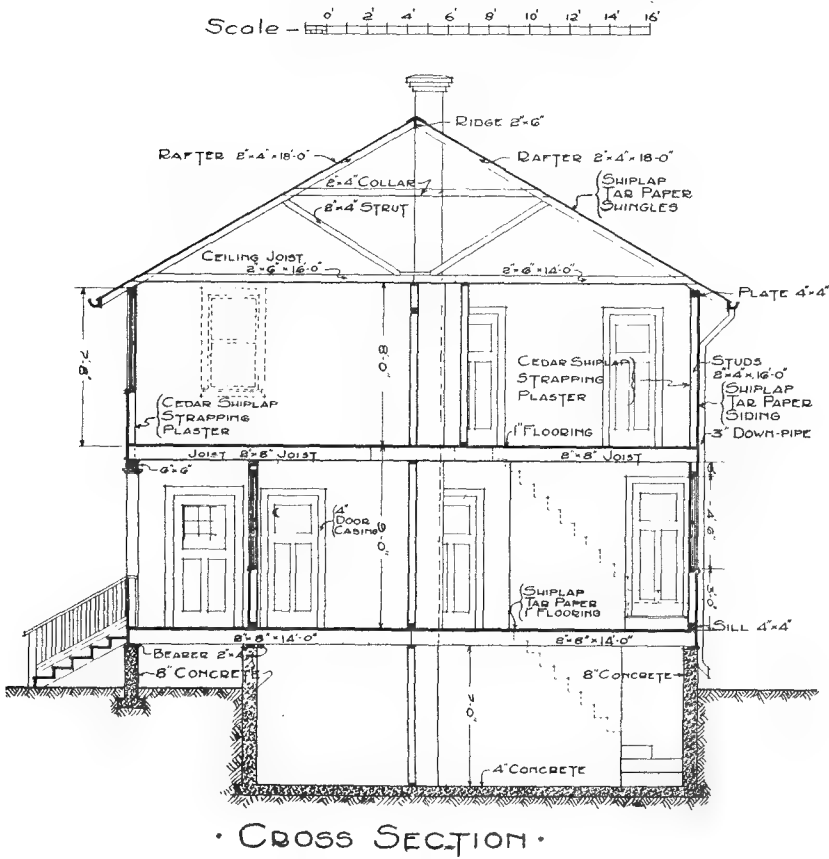


Fig. 7. The construction has been made as simple and economical as possible throughout. All the rafters are of one length; most of the floor-joists are of one length; and so on with regard to most items in the bill of material.

second floor. There are closets in each bedroom, and in addition a couple of closets for linen, etc., at the head of the stairs.

The construction has been made as simple and as economical as possible throughout. The windows and doors are all of standard sizes, except the basement and toilet windows. All the rafters are of

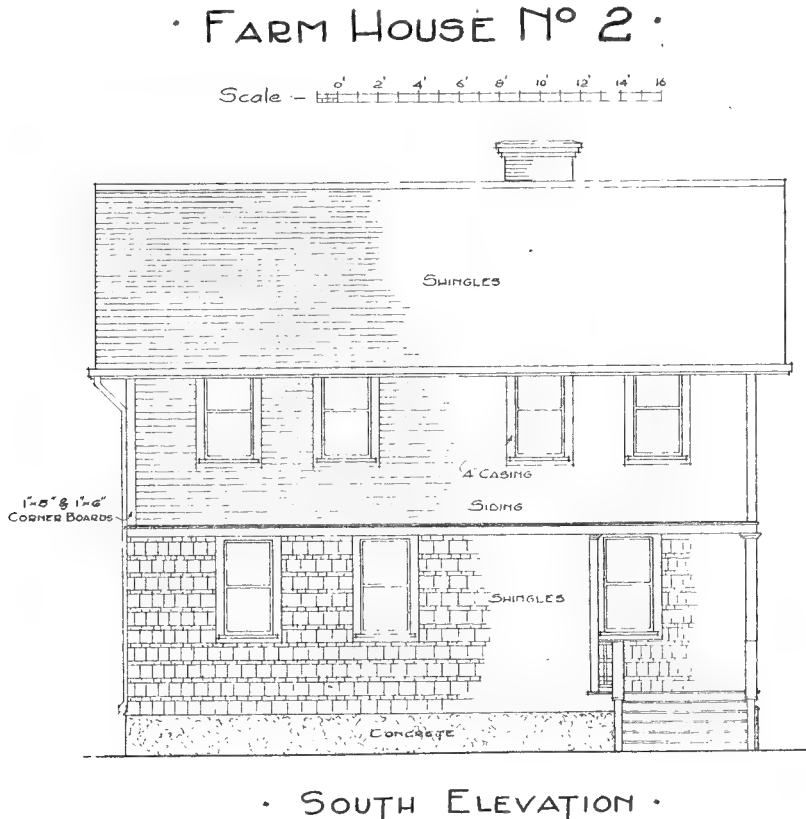


Fig. 8. The exterior finish of siding and of shingles laid in alternate wide and narrow courses will be found very attractive.

one length; most of the floor-joists are of one length; and so on with regard to most items in the bill of material. The ground floor should be kept from 3 to 3 feet 6 inches above the ground-line; this will give sufficient height for the basement windows to be kept well above the ground, and will require a depth of no more than 4 feet 6 inches for

excavation of the basement. The concrete walls of the basement are 8 inches thick and the basement floor 4 inches thick. The latter should be laid on a bed of dry rubble 2 or 3 inches thick to ensure good drainage.

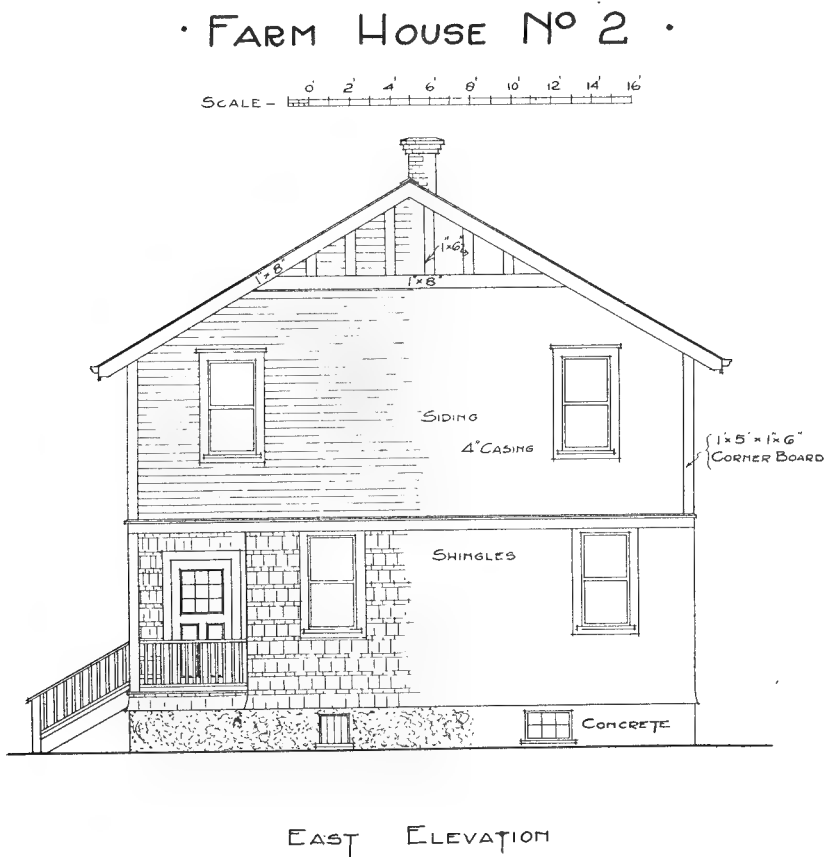


Fig. 9. The basement wall should be raised about 3 feet above the ground-line; this will leave plenty of room for the basement windows and will decrease the amount of excavation necessary.

BILL OF MATERIAL, FARM HOUSE NO. 2.

Framing Lumber.

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
3	6	6	12	108	Beams under ground-floor joists.
1	6	6	10	30	Beams under ground-floor joists.
1	6	6	8	24	Posts under beams in basement.
2	6	6	6	36	Beams under ground-floor joists.
4	6	6	2	24	Posts under floor-beams.
4	3	6	8	48	Posts under beams in basement.
17	2	8	16	363	Joists, second floor.
17	2	8	14	317	Joists, second floor.
34	2	8	14	635	Joists, ground floor.
2	2	6	18	36	Ridge-pole.
4	2	6	16	64	Binders on top of ceiling-joists.
17	2	6	16	272	Ceiling-joists.
17	2	6	14	238	Ceiling-joists.
56	2	4	18	672	Rafters.
54	2	4	16	576	Studs, front and back walls.
70*	2	4	16	747	Plates and sills throughout.
6	2	4	16	64	Studs, end walls of second floor and gables.
12	2	4	14	112	
4	2	4	14	37	Roof-struts, to cut 8 pieces.
5*	2	4	14	47	Roof-purlins.
7	2	4	12	56	Collar-ties.
8	2	4	12	64	Studs, end walls of second floor and gables.
12	2	4	10	80	
4	2	4	8	21	Studs, end walls of ground floor.
44	2	4	8	235	
8	2	4	8	43	Posts for coal-bins.
168	2	4	8	896	Studs for partition walls.
30	2	4	6	120	Extra studs at window openings.
30*	2	2	10	100	Bridging to joists.
16	2	2	8	43	Framing around brick chimney.
4*	1	6	16	32	Ribbon under joists, notched 1" into studs.
Total framing lumber				6,140	

Finish Lumber.

1	6	6	12	36	Beams, front and back porches.
1	6	6	8	24	Beams, front and back porches.
2	6	6	8	48	Corner-post, front and back porches.
1	6	6	6	18	Beams, front and back porches.
4	4	8	4	43	Shaped brackets to front porch.

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE NO. 2—*Concluded.**Finish Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
2	4	4	8	21	Newel-posts for porch steps.
2	4	4	4	11	Newel-posts for porch steps.
2	3	6	8	24	Front porch posts against walls.
2	2	12	14	56	Stair-strings.
2	2	12	10	40	Stair-strings.
4	2	12	6	48	Stringers to steps of front and back porches.
5	2	6	6	30	Handrails for porches and steps.
4	2	4	10	27	} Rails and door-framing for stair enclosure to hired man's bedroom.
1	2	4	8	5	
5	2	4	6	20	Rail at bottom of balusters, porches, and steps.
30	2	2	6	60	Balusters to porches and stairs to hired man's bedroom.
12*	1	12	16	192	Draining-boards, shelves in cupboard, and shelving in kitchen.
4	1	8	18	48	Fascia at gables.
4	1	8	16	43	Frieze at eaves.
2	1	8	16	21	Framing in gables.
9*	1	8	14	84	Belt course at second-floor level.
2	1	6	14	14	Ridge cover-boards.
8	1	6	10	40	Frieze at gables.
4	1	6	10	20	Framing in gables.
3	1	5	12	15	Ridge cover-boards.
16	1	4	10	53	Window-casings inside.
37	1	4	10	123	Door-casings.
3	1	4	10	10	} Hat and coat rails in lobby and clothes-closets.
2	1	4	8	5	
3	1	4	6	6	
37	1	4	8	99	Door-casings.
Total finish lumber				1,284	

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

1,000 feet, board measure, 1" shiplap on ground-floor joists.

2,900 feet, board measure, 1" shiplap lining for walls outside.

2,400 feet, board measure, 1" shiplap lining on inside of wall-studs.

1,400 feet, board measure, 1" roof-boardings, laid close.

250 feet, board measure, 1" boards for coal-bins.

600 feet, board measure, 1" V-joint for eaves, overhang of roof at gables, porch ceiling, and enclosure of stairs to man's bedroom.

250 feet, board measure, 1" V-joint for cupboards in wash-room and kitchen.

- 2,500 feet, board measure, 1" T. and G. flooring for all floors.
 1,750 feet, board measure, drop-siding.
 12,500 British Columbia Red Cedar edge-grain shingles (50 bundles) for roof.
 9,000 British Columbia Red Cedar edge-grain shingles (36 bundles) for walls.
 42 lineal feet $1\frac{1}{2}$ " x 12" front porch steps, in 14' lengths.
 16 lineal feet $1\frac{1}{2}$ " x 12" back porch steps, in 4' lengths.
 240 lineal feet 2" x 3" water-table.
 70 lineal feet 4" x 4" eave-gutter.
 620 lineal feet 1" x 8" base-board.
 620 lineal feet 1" quadrant mould.
 150 lineal feet picture-mould.
 20 lineal feet stair-rail, in 10' lengths.
 50 lineal feet 1" x 12" stair-treads for main stair, to cut 3' lengths.
 100 lineal feet 1" x 10" treads for stair to hired man's room and cellar stairs.
 1,000 lineal feet $\frac{1}{2}$ " x 2" strapping on inside of wall lining.
 19 windows, 2 lights, check-rail; outside measurement 2' 4" x 4' 6"; and 19 frames, sills, and outside casings for 8" wall.
 1 sash, 1 light; outside measurement 1' 5" x 2' $\frac{1}{2}$ "; and 1 frame with sill and outside casing for toilet.
 2 sashes, 6 lights, 8" x 10"; outside measurement 2' 4 $\frac{1}{2}$ " wide by 2' 1" high; and 2 frames and sills for cellar.
 13 doors, 2' 6" x 6' 6", for inside; and 13 frames for 5 $\frac{1}{2}$ " wall.
 2 doors, 2' x 6' 6", for closets at head of landing, second floor; and 2 frames for 5 $\frac{1}{2}$ " wall.
 2 doors, 3' x 6' 6", for living-room; and 2 frames for 5 $\frac{1}{2}$ " wall.
 1 front door, 3' x 6' 6", top panels glazed; and 1 frame for 8" wall.
 1 back door, 2' 6" x 6' 6"; and frame for 8" wall.
 100 bundles of lath.
 15 rolls of tar-paper or other building-paper for outside walls, roof, and ground floor.

Hardware.

- 125 lb. 4" common nails for framing.
 25 lb. 5" spikes.
 110 lb. $1\frac{1}{4}$ " shingle-nails, best-quality galvanized, zinc-clad, or cut iron.
 60 lb. 2 $\frac{1}{2}$ " flooring-nails.
 40 lb. 2" flooring-nails for siding.
 30 lb. 2" finish-nails for V-joint.
 150 lb. 2 $\frac{1}{2}$ " common nails.
 100 lb. lathing-nails.
 36 lineal feet 3" rain-water pipe.
 2 projections, 18", for offsets to rain-pipe.
 2 shoes, 3", for rain-water pipe.
 4 wall-brackets for handrail fixing.
 19 sets of weights and lines for windows.
 19 sash-fasteners.
 4 pairs 4" T-hinges for toilet and cellar sash and coal-chute door.
 3 sash-fasteners for toilet and cellar windows.
 19 sets of door-lock and trim.
 19 pairs of door-hinges.
 8 pairs 4" T-hinges for cupboard doors.
 4 cupboard-door catches inside.
 4 cupboard-door catches outside.
 5 dozen hat and coat hooks.

- 3 thimbles for flue-pipes.
- 1 sink, 30", for kitchen.
- 1 sink, 24", for wash-room.
- 1 toilet set.
- 20 lineal feet 1½" waste-pipe to sinks.
- 16 lineal feet sheet-metal flushing, 18" wide, to go around chimney.
- Plastering material to cover 700 superficial yards.
- 30 yards of gravel for foundation.
- 160 bags of cement for foundation.
- 2,500 brick for chimney.
- 13 bushels of lime for chimney.

Farm House No. 3.

This house is designed in the bungalow style, and will be found very convenient in arrangement and low in cost. The outside size is 24 x 36 feet. Like House No. 1, it will accommodate a family of four or five persons, but it has larger rooms with more closets, and it has in addition a big separate living-room, and a verandah across the whole front.

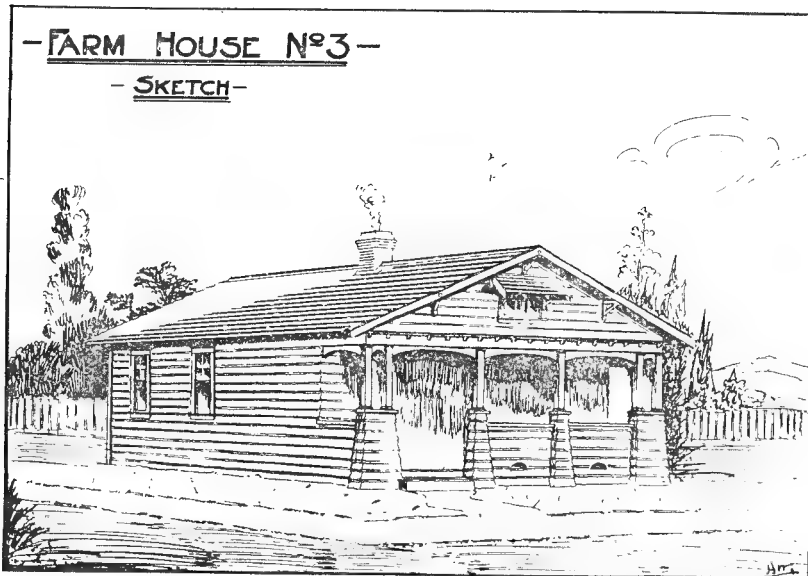
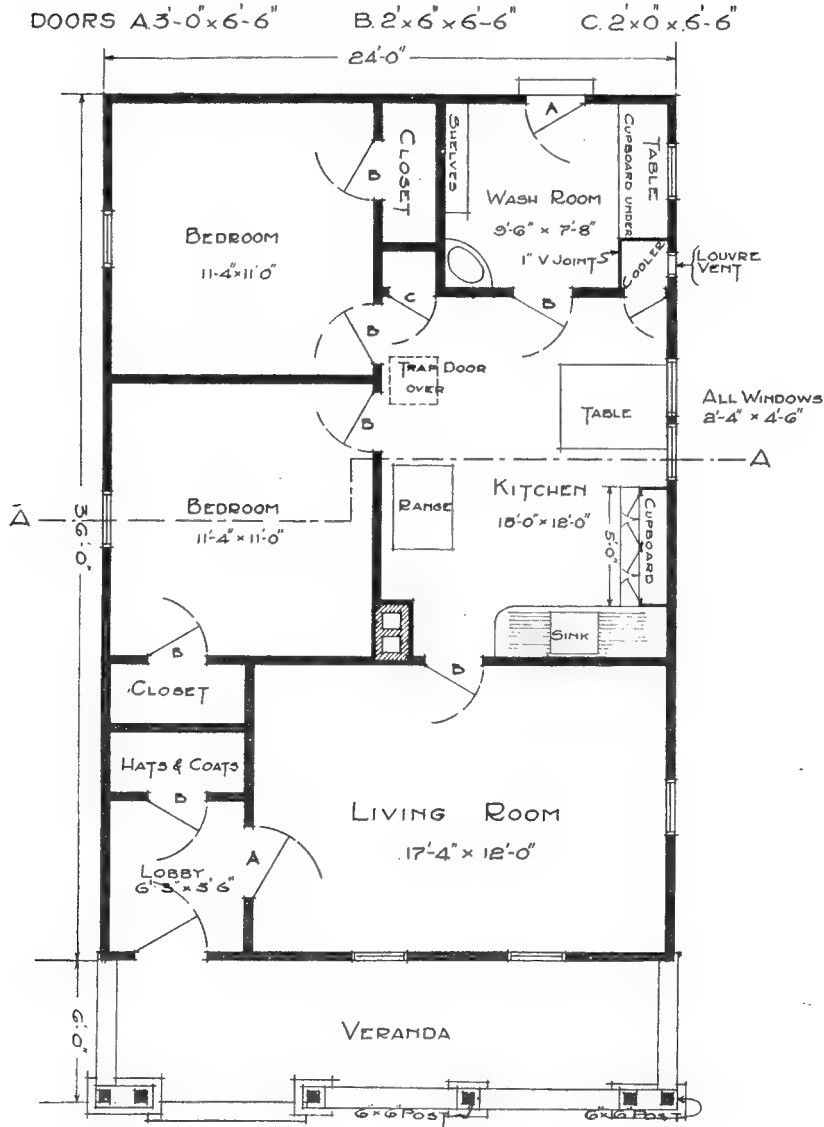


Fig. 10. Designed in the bungalow style; very convenient in arrangement and low in cost. The outside size is 24 x 36 feet.

The kitchen is fitted with a sink with draining-boards, cupboards under them, cabinet, closet, and cooler; and the wash-room with a fixed

· FARM HOUSE N^o 3 ·



· PLAN ·

SCALE - 0' 2' 4' 6' 8' 10' 12' 14' 16'

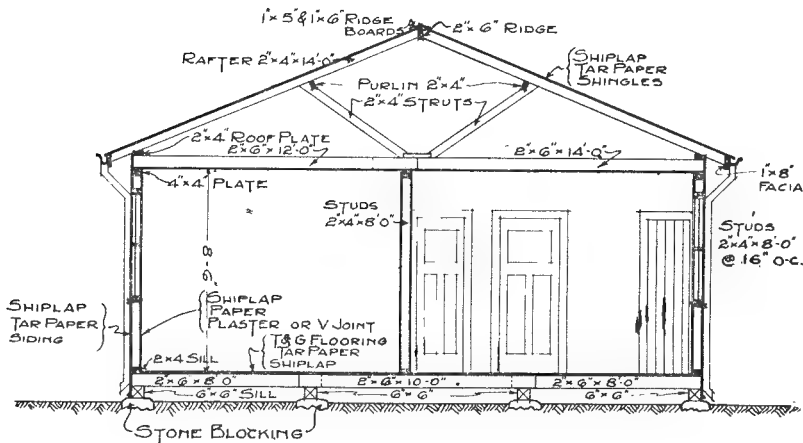
Fig. 11. Like House No. 1, it will accommodate a family of four or five persons, but it has larger rooms with more closets, and has in addition a big separate living-room, and a verandah across the whole front.

table, cupboards under it, shelving, and a wash-basin stand. Over the kitchen is a trap-door to the loft. Two bedrooms, each 11 x 11 feet 4 inches, provided with large clothes-closets, open off the kitchen.

The chimney is convenient for connections from the kitchen, bedroom, and living-room. The best place for a cellar, if one is desired, would be under the kitchen.

A large amount of short-length lumber can be used in this house. Nearly all the studs are 8 feet long, the floor-joists 6, 8, or 10 feet,

· FARM HOUSE N° 3 ·



· CROSS SECTION · ON A-A

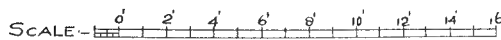


Fig. 12. A large amount of short-length lumber can be used in this house. No piece exceeds 16 feet in length.

and the rafters are all 14 feet; in fact, no lumber exceeds 16 feet in length. The outside walls are warmly built of siding, paper, shi lap, studding, and another layer of shi lap inside, on which 1- x 2-inch strips are nailed to take the laths for plastering.

BILL OF MATERIAL, FARM HOUSE No. 3.

Framing Lumber.

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
14*	6	6	12	504	Bearers under floor-joists.
3	2	6	16	48	Ridge-pole.
1	2	6	16	16	Binders on ceiling-joists.
1	2	6	14	14	Binders on ceiling-joists.
29	2	6	14	406	Ceiling-joists; 16" centres.
29	2	6	12	348	Ceiling-joists; 16" centres.
2	2	6	12	24	Binders on ceiling-joists.
25	2	6	10	250	Floor-joists; 18" centres.
50	2	6	8	400	Floor-joists; 18" centres.
17	2	6	6	102	Floor-joists to verandah; 18" centres (laid with a slight fall to front of verandah).
60*	2	4	16	640	Roof, wall, and partition plates and sills.
6*	2	4	16	64	Roof-purlins under rafters.
2	2	4	16	21	Studs, end walls and gables; 16" centres.
12	2	4	14	112	
11	2	4	14	103	Extra studs for door openings.
66	2	4	14	616	Rafters.
16	2	4	12	128	Studs, end walls and gables; 16" centres.
4	2	4	10	27	
8	2	4	10	53	Extra studs for window openings.
62	2	4	8	331	Studs, side walls; 16" centres.
105	2	4	8	560	Studs to partition and front wall; 16" centres.
8	2	4	6	32	Roof-struts.
6	2	2	8	16	Furring around brick chimney.
Total framing lumber				4,815	

Finish Lumber.

2	6	6	10	60	Beams to verandah.
1	6	6	8	24	Beams to verandah.
6	6	6	8	144	Posts to front porch.
2	6	6	6	36	Beams to verandah.
2	3	6	8	24	To cut brackets on front gable.
2	2	6	8	16	Handrail to verandah.
2	2	6	6	12	Handrail to verandah.
2	2	4	8	11	Rails at bottom of verandah balusters.
2	2	4	6	8	Rails at bottom of verandah balusters.
40	2	2	6	80	Balusters to verandah, to cut 80 pieces.

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE No. 3—*Concluded.*

Finish Lumber—Concluded.

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
12	1	12	12	144	Shelving and draining-boards.
3	1	12	8	24	Shaped fascia to verandah under beams.
2	1	12	6	12	
4	1	8	14	37	Fascia at gables.
6*	1	8	12	48	Frieze at sides.
3	1	6	16	24	Ridge cover-boards.
2	1	6	14	14	Frieze at gables.
2	1	6	12	12	Risers to steps.
4	1	6	10	20	Corner-boards.
3	1	5	16	20	Ridge cover-boards.
4	1	5	10	17	Corner-boards.
24	1	4	14	112	Door-casing.
8	1	4	10	27	Window-casings inside.
9	1	4	8	24	Window-casings inside.
1	1	4	8	3	Hat and coat rails.
3	1	4	6	6	Hat and coat rails.
12	1	4	4	16	Door-casing.
Total finish lumber				975	

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

- 1,200 feet, board measure, shiplap on floor-joists.
- 1,600 feet, board measure, shiplap on outside walls.
- 1,200 feet, board measure, shiplap lining on inside of wall-studs.
- 200 feet, board measure, shiplap lining on walls of wash-room.
- 600 feet, board measure, 1" V-joint to overhang of eaves and gables and ceiling of verandah.
- 200 feet, board measure, 1" V-joint to cooler and kitchen cupboards.
- 1,200 feet, board measure, roof-boardings.
- 1,700 feet, board measure, drop-siding.
- 1,350 feet, board measure, 1" T. and G. Fir or Larch flooring.
- 12,500 British Columbia Red Cedar edge-grain shingles (50 bundles).
- 600 lineal feet $\frac{1}{2}$ " x 2" strapping to go on inside shiplap lining of walls, to nail laths to.
- 100 lineal feet water-table.
- 100 lineal feet 4" x 4" eave-gutter.
- 12 lineal feet $1\frac{1}{2}$ " x 12" tread to front and back steps.
- 32 lineal feet window-stool.
- 85 lineal feet picture-mould for living-room and lobby.
- 380 lineal feet 8" base.
- 400 lineal feet 1" quadrant mould.
- 8 windows, 2 lights, check-rail, 2' 4" x 4' 6", top sash in 4 lights; and 8 frames with sills and outside casing for 8" wall.

- 1 sash, 3 lights, 10" x 12"; outside measure 2' 10½" wide by 1' 5" high; and 1 frame with sill and outside casing for 6" wall.
- 7 doors, 2' 6" x 6' 6", for inside; and 7 frames for 5½" wall.
- 1 door, 2' x 6' 6", kitchen store cupboard; and 1 frame for 5½" wall.
- 1 door, 3' x 6' 6", between lobby and living-room; and 1 frame for 5½" wall.
- 1 front door, 3' x 6' 6"; and 1 frame for 8" wall.
- 1 back door, 3' x 6' 6"; and 1 frame for 8" wall.
- 13 rolls of tar or building paper.
- 65 bundles of lath.

Hardware.

- 100 lb. 4" common nails.
- 130 lb. 2½" common nails.
- 15 lb. 2" finish-nails.
- 30 lb. 2½" flooring-nails.
- 40 lb. 2" flooring-nails for siding.
- 65 lb. 1¼" shingle-nails, best-quality galvanized, zinc-clad, or cut iron.
- 65 lb. lathing-nails.
- 16 lineal feet sheet-metal flashing, 14" wide, to go around chimney.
- 11 pairs door-hinges.
- 11 sets door-locks and trim.
- 8 sash-fasteners.
- 8 sets of lines and weights for sashes.
- 2 thimbles for flue-pipes.
- 10 pairs 4" T-hinges for cupboard doors and trap-door.
- 7 cupboard-door latches.
- 2 cupboard-door catches.
- 4 dozen hat and coat hooks.
- 20 lineal feet 3" rain-water pipe.
- 2 offsets, 18", for rain-water pipe.
- 2 shoes for rain-water pipe.
- 1 sink, 30", for kitchen.
- 1 angle wash-basin for wash-room.
- 20 lineal feet 1½" waste-pipe for basin and sink.
- 900 brick for chimney.
- 5 bushels lime for chimney.
- Plastering material to cover 440 superficial yards.

Farm House No. 4.

This is another attractive one-story house, compact and economical. It is about 30 feet square outside, and the accommodation is similar to that of House No. 3, but there is a basement in addition. A small central hall gives access to all the rooms, including the cellar, which is located under the kitchen and wash-room, and is large enough for a furnace and for fuel-storage.

The windows are all uniform and standard in size, except in the basement. The floor-level should be about 3 feet 6 inches above the ground to allow plenty of room for the cellar windows. The two-flue brick chimney will serve the kitchen and living-room, as well as a furnace if one is installed.

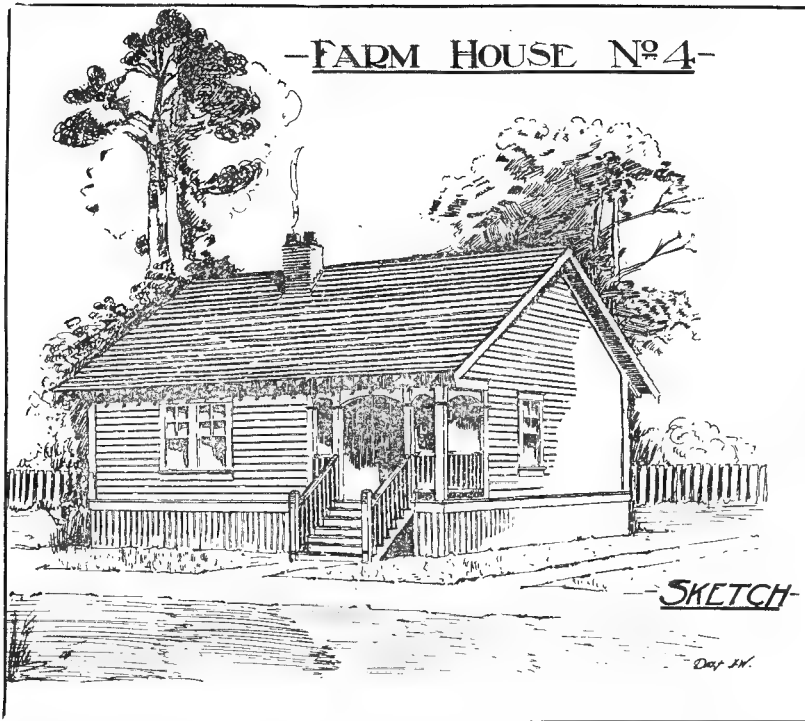


Fig. 13. Another attractive one-story house, compact, well arranged, and economical. The accommodation is similar to that of House No. 3, but there is a basement in addition.

- FARM HOUSE No 4 -

- SCALE OF FEET -

12 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
INCHES FEET

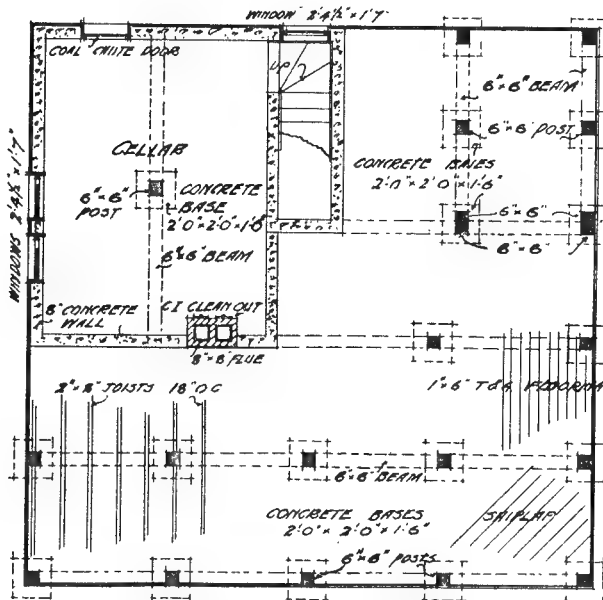
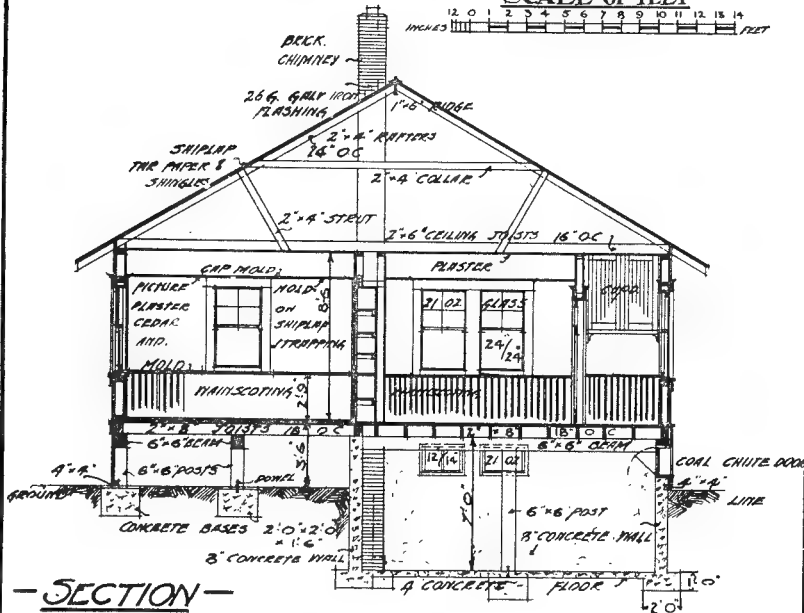


Fig. 14. The windows are all standard and uniform in size, except in the cellar.

BILL OF MATERIAL, FARM HOUSE NO. 4.

Framing Lumber.

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
1	6	6	16	48	Beam over cellar.
3	6	6	14	126	Beams under floor-joists.
3	6	6	10	90	Beams under floor-joists.
5	6	6	8	120	Beams under floor-joists.
1	6	6	8	24	Post under beam in cellar.
20	6	6	2	120	Posts under floor-beams.
8*	4	4	12	128	Cut in between 6" x 6" posts to take lower end of vertical siding.
2	2	12	16	64	Cellar-stair strings.
8	2	10	6	80	Cellar steps.
12	2	8	14	224	Joists under kitchen.
21	2	8	14	392	Joists under living-room and adjoining bedroom.
8	2	8	14	149	Joists under bedrooms.
11	2	8	6	88	Joists under bedrooms.
5	2	6	16	80	Ceiling-joists over hall, etc.
16	2	6	14	224	Ceiling-joists over living-room.
9	2	6	14	126	Ceiling-joists over front bedroom.
9	2	6	12	108	Ceiling-joists over back bedroom.
10	2	6	12	120	Ceiling-joists over kitchen.
5	2	6	8	40	Ceiling-joists over wash-room and back porch.
9	2	6	6	54	Ceiling-joists over verandah.
36	2	4	20	480	Rafters.
4	2	4	18	48	Studs, side walls and in gables.
15*	2	4	16	160	Sills to outside wall and partitions.
12	2	4	16	128	Studs, side walls and in gables.
15*	2	4	16	160	Partition-plates.
8	2	4	16	85	Collar-ties.
8*	2	4	16	85	Roof-plates, doubled to form 4" x 4".
20*	2	4	16	213	Plates on partitions.
8	2	4	14	75	Studs, side walls and in gables.
11	2	4	14	103	Extra studs for door openings.
6	2	4	12	48	Roof-purlins.
8	2	4	12	64	Studs, side walls and in gables.
8	2	4	10	53	Studs, side walls and in gables.
4*	2	4	10	27	Plates on partitions.
18	2	4	10	120	Extra studs for window openings.
6	2	4	10	40	Roof-struts.
45	2	4	8	240	Studs, outside walls to front and back.
1*	2	4	8	5	Roof-plates, doubled to form 4" x 4".
85	2	4	8	453	Partition-studs.
4	2	4	8	21	Studs, side walls and in gables.

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE NO. 4—*Concluded.**Framing Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
6	2	4	6	24	Extra studs to door openings.
10	2	2	8	27	Framing around brick chimney.
3	1	6	12	18	Ridge.
Total framing lumber				5,082	

Finish Lumber.

5	6	6	8	120	Front porch posts.
4	4	4	4	21	Posts at foot of steps.
1	3	4	10	10	Rail on top of porch balusters.
4	3	4	6	24	Handrail to front and back steps.
4	2	12	6	48	Strings to porch steps.
1	2	10	10	17	Cellar-window sills.
1	2	8	8	11	Outside door-sills.
2	2	6	8	16	Back porch posts.
1	2	4	10	7	Rail at bottom of porch balusters.
23*	2	2	12	92	Balusters to porch and steps.
1	1	12	16	16	Shaped fascia to front porch.
10	1	12	12	120	Cupboards in kitchen and wash-room.
6	1	12	10	60	Shelving.
1	1	10	10	8	Centre casing, mullion windows.
4	1	8	20	53	Fascia to gables.
4	1	8	16	43	Frieze, side walls.
4	1	6	18	36	Frieze to gables.
6	1	6	12	36	Ridge cover-boards.
4	1	6	10	20	Corner-boards.
3	1	6	10	15	False beam, front porch.
3	1	6	6	9	False beam, front porch.
3	1	6	6	9	Window linings in basement.
4	1	5	10	17	Corner-boards.
22	1	4	14	103	Door-casings.
22	1	4	4	30	Door-casings.
9	1	4	10	30	Inside window-casing.
9	1	4	8	24	Inside window-casing.
8	1	3	8	16	Cupboards in kitchen and wash-room.
Total finish lumber				1,011	

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

1,100 feet, board measure, shiplap on floor-joists.

2,200 feet, board measure, shiplap on outside walls.

1,280 feet, board measure, shiplap lining on inside of outside wall-studs.

- 1,200 feet, board measure, 1" T. and G. flooring.
- 1,500 feet, board measure, roof-boardings, laid close; if open boarding is desired, 1,000 feet will suffice.
- 500 feet, board measure, 1" V-joint for ceiling of front and back porches and overhang of gables and eaves.
- 120 feet, board measure, 1" V-joint for cupboards in kitchen and wash-room and trap-door in hall ceiling.
- 1,000 feet, board measure, 1" V-joint dado, 2' 9" high, in all rooms.
- 2,500 feet, board measure, drop-siding.
- 13,500 British Columbia Red Cedar edge-grain shingles (54 bundles).
 - 36 lineal feet 2" x 12" stair-treads, in 6' lengths.
 - 24 lineal feet 2" x 10" stair-treads, in 4' lengths.
 - 36 lineal feet 1" x 4" stair-risers, in 6' lengths.
 - 120 lineal feet 2" x 8" plinth.
 - 120 lineal feet 2" x 3" water-table.
 - 34 lineal feet ridge-roll.
 - 250 lineal feet capping to dado.
 - 250 lineal feet quadrant mould at junction of dado and floor.
 - 20 lineal feet small mould around porch posts.
 - 45 lineal feet cap-mould to window-casings outside.
 - 45 lineal feet window-stool.
 - 40 lineal feet 1" x 3" shelf-bearers.
 - 150 lineal feet picture-mould.
 - 350 lineal feet ½" x 2" strapping on inside of shiplap.
 - 70 lineal feet 4" x 4" eave-gutter.
 - 8 doors, 2' 6" x 6' 6", for inside; and 8 frames for 5½" wall.
 - 1 door, 2' x 6' 6", for bedroom cupboard; and 1 frame for 5½" wall.
 - 1 door, 3' x 7", for back entrance; and 1 frame for 8" wall.
 - 1 door, 3' x 7", for front entrance; and 1 frame for 8" wall.
 - 9 windows, 2 lights, check-rail, 2' 4" x 4' 6"; and 9 frames, sills, and casings for 8" wall.
 - 3 sashes, 3 lights, 8" x 14", outside size 2' 4½" x 1' 7", for cellar; and 3 frames, sills, and casings for cellar wall.
 - 13 rolls of tar-paper.
 - 45 bundles of lath.

Hardware.

- 16 lineal feet sheet-metal flashing, 18" wide, to go around chimney.
- 20 lineal feet 3" rain-water pipe.
- 2 swan-necks, 24", for projection for rain-water pipe.
- 2 shoes for rain-water pipe.
- 11 pairs door-hinges.
- 11 locks and trim for doors.
- 9 sash-fasteners.
- 2 pairs 4" T-hinges for cellar windows.
- 9 sets lines and weights for windows.
- 2 window-fasteners for cellar windows.
- 7 pairs 4" T-hinges for cupboard doors.
- 7 cupboard-door fasteners.
- 1 basin for wash-room.
- 1 sink, 30", for kitchen.
- 20 lineal feet 1½" waste-pipe to sink and basin.
- 24 hat and coat hooks for cupboards.
- 1 metal door and frame for ash clean-out in cellar.
- 2 thimbles, 6", for chimney.
- 50 lb. lath-nails.
- 125 lb. 4" common nails.
- 120 lb. 2½" common nails.
- 30 lb. 2½" flooring-nails.

- 40 lb. 2" finish-nails.
- 40 lb. 2" flooring-nails for siding.
- 20 lb. 2½" finish-nails.
- 65 lb. 1¼" shingle-nails, best-quality galvanized, zinc-clad, or cut iron.
- 1,500 brick for chimney.
- 10 bushels of lime for chimney.
- Plaster material sufficient to cover 300 superficial yards.
- 31 yards of gravel for concrete walls and floor of basement.
- 160 bags of cement for above.

Farm House No. 5.

This house will appeal to the farmer who desires a residence of attractive appearance, with plenty of room, at a moderate cost. It is 24 x 35 feet outside, has a basement, two stories, and a loft, and will accommodate a family of eight or more persons.

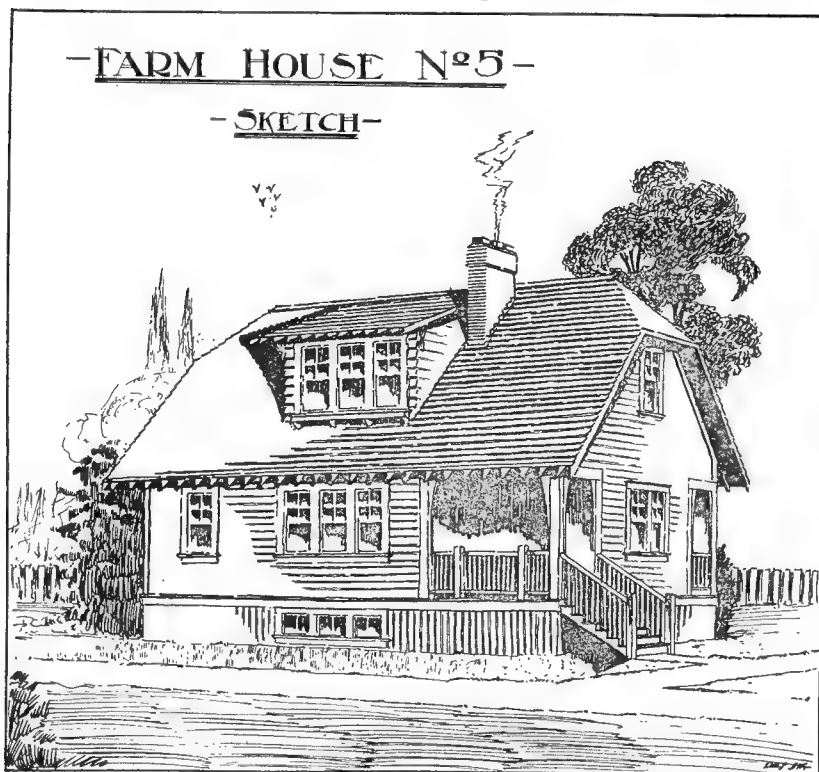


Fig. 16. A house that will appeal to the farmer who desires a residence of attractive appearance with plenty of room at a moderate cost. It has a basement, two stories and a loft, and will accommodate a family of eight or more.

— SCALE OF FEET —

INCHES 12 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 FEET



Fig. 18. The living-room, which will also serve as the dining-room, is the central feature of the house. It extends across the whole width and has large windows facing front and back.

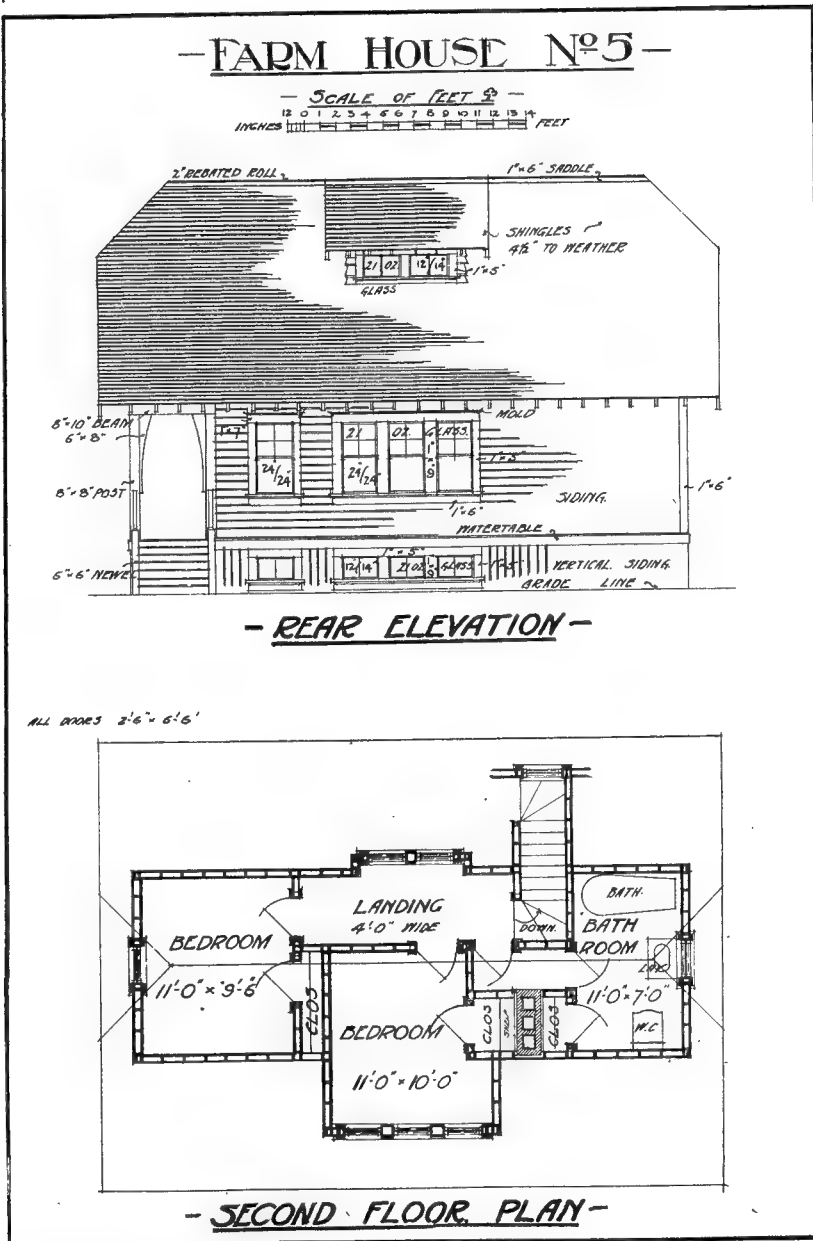


Fig. 19. The bath-room is placed immediately over the kitchen. This position will ensure a quick supply of hot water and will require a minimum length of water and waste pipe.

The basement is the full size of the house and contains a heating-chamber, a room for a rain-water tank, two fuel stores or bins, and one store-room. The fuel-stores are fitted with movable boards to give easy access to the coal. The stairway to the basement leads out of the kitchen.

On the ground floor there is a large living-room, a kitchen, and two bedrooms, each with closets. The living-room, which will serve also as the dining-room, is the central feature of the house. It extends across the full width of the house and has large windows facing front and back; a fireplace, though not shown, can easily be put in. The kitchen, while not as large as in some of the other houses, is very compact and convenient to work in.

On the bedroom floor there are two bedrooms and a large bath-room, all provided with good closets. The bath-room is placed immediately over the kitchen; this position will ensure a quick supply of hot water and a minimum length of water and waste pipe.

BILL OF MATERIAL, FARM HOUSE No. 5.

Framing Lumber.

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
1	6	8	16	64	Beams in basement under ground-floor joists.
2	6	8	14	112	
2	6	8	12	96	
1	6	8	8	32	
6	6	6	8	144	Posts under beams in basement.
2	2	10	14	47	Strings for stairs to bedrooms.
6	2	10	14	140	To cut loose boards to fuel-bins.
2	2	10	12	40	Strings to basement stairs.
7	2	10	6	70	Treads to basement stairs.
14	2	8	16	299	Joists under kitchen and verandah.
10	2	8	16	213	Joists under living-room.
19	2	8	14	355	Joists over living-room.
9	2	8	14	168	Joists over kitchen.
9	2	8	14	168	Joists over ground-floor bedrooms.
9	2	8	12	144	Joists over ground-floor bedrooms.
17	2	8	12	272	Joists under ground-floor bedrooms.
9	2	8	12	144	Joists over verandah and back porch.
10	2	8	8	107	Joists under living-room.
2	2	6	16	32	Ridge.
10	2	6	16	160	Ceiling-joists in dormers.
20	2	6	8	160	Collar-ties as ceiling-joists.
36	2	4	20	480	Rafters, main roof.

BILL OF MATERIAL, FARM HOUSE NO. 5—*Continued.**Framing Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
30*	2	4	16	320	Plates and sills.
12	2	4	16	128	Rafters to roof ends.
8	2	4	16	85	Studs, side walls and gables.
8	2	4	14	75	Studs, side walls and gables.
25	2	4	14	233	Studs to basement partitions.
12	2	4	14	112	Rafters, front dormer.
17	2	4	14	159	Extra studs for door openings.
30*	2	4	14	280	Plates and sills.
20*	2	4	12	160	Plates and sills.
10	2	4	12	80	Rafters below back dormer.
10	2	4	12	80	Studs, side walls and gables.
18	2	4	10	120	Studs, side walls and gables.
6	2	4	12	48	Bearers under stairs.
30*	2	4	10	200	Plates and sills.
130	2	4	10	867	Studs, ground-floor wall and partitions.
9	2	4	10	60	Rafters, back dormer.
18	2	4	10	120	Extra studs to window openings.
65	2	4	8	347	Studs, second floor.
4	2	4	8	21	Studs, side walls and gables.
8	2	4	8	43	Rafters to hip-roof.
47	2	4	6	188	Partition-studs, second floor.
10	2	4	6	40	Rafters below front dormer.
8	2	4	6	32	Extra studs for door openings.
5	2	4	6	20	Upright ties for ceiling-joists to dormer rafters.
24	2	4	4	64	Upright ties, ceiling-joists to ridge.
15*	2	2	16	80	Bridging to joists.
14	2	2	10	47	Furring around brickwork of chimney.
14	2	2	8	37	Furring around brickwork of chimney.
Total framing lumber				7,493	.

Finish Lumber.

1	8	10	12	80	Beams, front and back porches.
1	8	10	10	67	Beams, front and back porches.
1	8	10	6	40	Beams, front and back porches.
6	8	8	8	256	Posts, front and back porches.
4	6	8	10	160	Brackets on front porch, to cut 8 pieces.
6	6	6	4	72	Newels to porch steps and verandah.
4	2	12	6	48	Strings, front and back porch steps.

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE No. 5—*Concluded.**Finish Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
3	2	10	10	50	Steps, back porch, to cut 6 pieces.
2	2	2	10	7	} Framing to kitchen cupboard and draining-board.
2	2	2	8	5	
40*	2	2	6	80	Verandah balusters.
6*	1	12	16	96	Cupboard shelving.
10*	1	10	16	133	Belt course and casings to mullions of windows.
5*	1	10	14	58	Frieze on walls.
4	1	8	16	43	Fascia to gables.
2	1	8	14	19	Fascia to dormers.
2	1	8	12	16	Fascia to gables.
2	1	8	10	13	Fascia to dormers.
4*	1	6	16	32	Ridge cover-boards.
4	1	6	16	32	Frieze to gables.
2	1	6	12	12	Frieze to gables.
14	1	6	10	70	Corner-boards and casings.
16	1	6	8	64	Door-casings, heads.
32	1	5	14	187	Door-casings, uprights.
4	1	4	10	13	Hat and coat rails.
14	1	4	10	47	Inside casings for windows.
8	1	4	8	21	Inside casings for windows.
3	1	3	10	8	Kitchen cupboards.
Total finish lumber				1,729	

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

- 1,000 feet, board measure, 1" shiplap on ground-floor joists.
- 700 feet, board measure, 1" shiplap on bedroom-floor joists.
- 2,300 feet, board measure, 1" shiplap on all outside walls.
- 1,600 feet, board measure, 1" shiplap lining on inside of wall-studs.
- 600 feet, board measure, 1" shiplap on partition-studs in basement.
- 1,800 feet, board measure, 1" roof-board, laid close; if open board-
ing is desired, 1,200 feet will suffice.
- 750 feet, board measure, 1" V-joint for overhang of eaves and gables,
porch ceilings, kitchen cupboards, and basement door.
- 2,300 feet, board measure, siding.
- 1,700 feet, board measure, 1" T. and G. flooring.
- 17,000 British Columbia Red Cedar edge-grain shingles (68 bundles).
(If V-joint dado 3 feet high in all rooms is desired, 1,700 feet,
board measure, V-joint and 420 lineal feet cap-mould for it
will be required.)
- 32 lineal feet ridge-roll.
- 36 lineal feet 1½" x 12" treads for front porch steps, in 16' lengths.
- 40 lineal feet 3" x 4" handrail to steps and verandah.
- 120 lineal feet 2" x 4" water-table.
- 110 lineal feet 4" x 4" cave-gutter.
- 70 lineal feet window-stool.

- 220 lineal feet cap-mould on door and window-casings.
- 260 lineal feet picture-mould.
- 450 lineal feet 1" x 8" base-board.
- 450 lineal feet 1" quadrant mould.
- 40 lineal feet angle-bead to plaster.
- 14 lineal feet wall handrail for stairs to bedroom floor.
- 16 windows, 2 lights, check-rail; outside measurement 2' 4" x 4' 6", top sashes in 4 lights; and 16 frames complete with sills and outside casings for 8" wall.
- 13 sashes, 2 lights, 12" x 14"; outside measurement 2' 4½" x 1' 7"; and 12 frames complete with sills and outside casings for basement (this includes 1 frame for fuel-chute door); and 2 frames for landing to bedroom floor complete with sills and casings for 8" wall.
- 13 doors, 2' 6" x 6' 6", for inside; and 13 frames for 5½" wall.
- 1 door, 2' x 6' 6"; and 1 frame for 5½" wall.
- 1 front door, 3' x 6' 6"; and 1 frame and sill for 8" wall.
- 1 back door, 2' 6" x 6' 6"; and 1 frame and sill for 8" wall.
- 100 bundles of lath.
- 16 rolls tar or building paper.

Hardware.

- 150 lb. 4" common nails.
- 180 lb. 2½" common nails.
- 50 lb. 2" flooring-nails for siding.
- 40 lb. 2½" flooring-nails.
- 40 lb. 2" finish-nails.
- 30 lb. 2½" finish-nails.
- 85 lb. 1¼" shingle-nails, best-quality galvanized, zinc-clad, or cut iron.
- 100 lb. lath-nails.
- 2 metal doors and frames for ashes clean-out in cellar.
- 3 thimbles for chimney.
- 50 lineal feet 3" rain-water pipe.
- 6 swan-necks, 18" projection, for rain-water pipe.
- 4 rain-water pipe shoes.
- 16 sets lines and weights for window-sashes.
- 16 sash-fasteners.
- 20 pairs 4" T-hinges for basement sashes and kitchen cupboards.
- 15 pairs door-hinges.
- 1 pair swing-door hinges from kitchen to living-room.
- 3 pairs 6" T-hinges for basement doors.
- 14 small bolts as fasteners to basement windows, landing windows, and fuel-chute door.
- 6 cupboard-door latches.
- 3 thumb-latches for basement doors.
- 16 sets locks and trim for doors.
- 4 dozen hat and coat hooks.
- 1 sink, 30", for kitchen.
- 1 set wash-tubs for basement.
- 1 bath, 1 basin, and 1 toilet fixture for bath-room.
- 2,250 brick for chimney.
- 10 bushels of lime for chimney.
- 40 yards of gravel for foundation.
- 200 bags of cement for foundation.

Plastering material to cover 650 superficial yards.

NOTE.—The following are not included in this bill of material: Furnace and heating installation, soft-water tank, drainage, waste and ventilating pipes.

Farm House No. 6.

This is the largest, best-finished, and most expensive house presented in the bulletin, and it represents a very comfortable and attractive home for the prosperous farmer. It measures about 34 x 46 feet outside, has three stories and a basement, and will accommodate twelve or more persons.

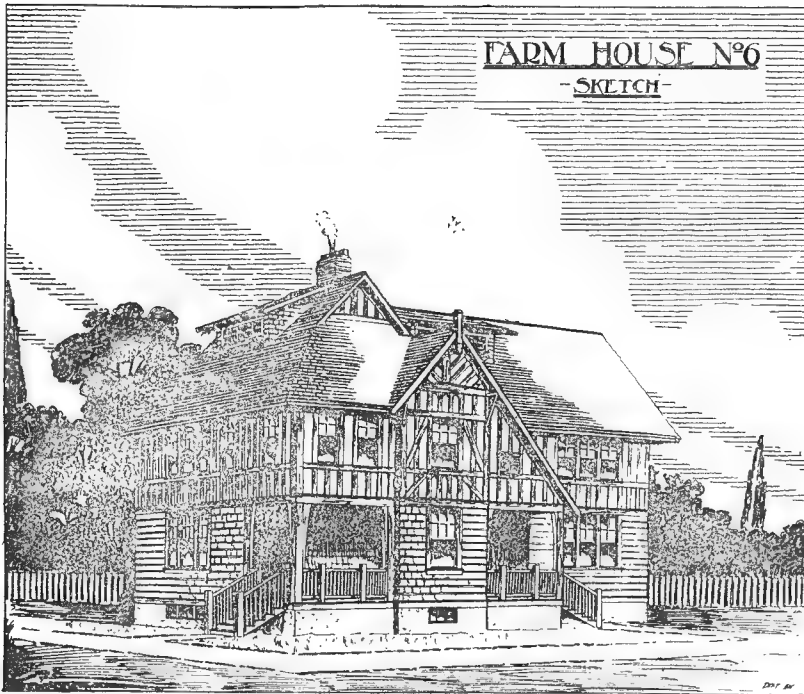
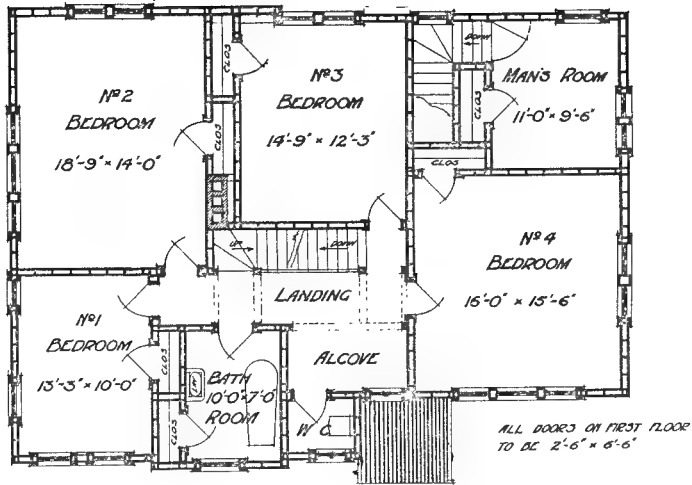


Fig. 20. The largest, best-finished, and most expensive of the six houses. It represents a very comfortable and attractive home for the prosperous farmer.

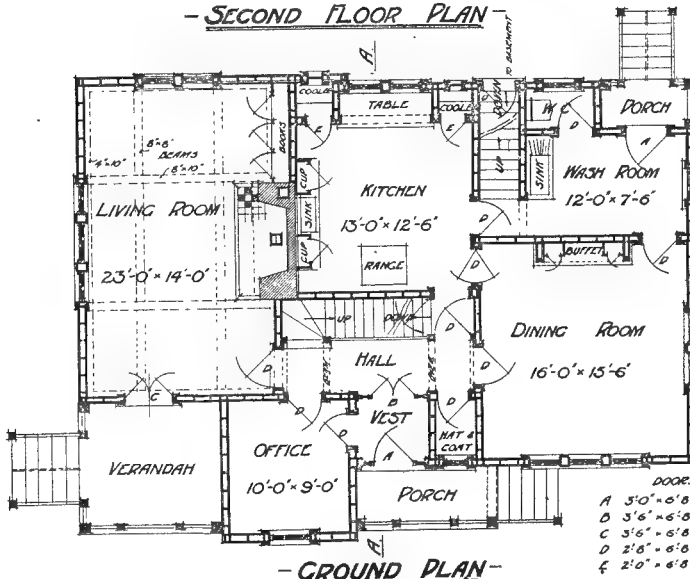
Many excellent features will be noted in the plans, such as the large living-room (23 x 14 feet) with its open fireplace and private verandah on the south-west corner; the convenient arrangement and equipment of the kitchen, dining-room, and wash-room; and the office handily placed next the front entrance, with a door from the entrance vestibule, as well as one from the inner hall. The living-room and hall have beamed ceilings, which add greatly to the appearance of a room, and

- FARM HOUSE N^o6 -

- SCALE OF FEET -



- SECOND FLOOR PLAN -



- GROUND PLAN -

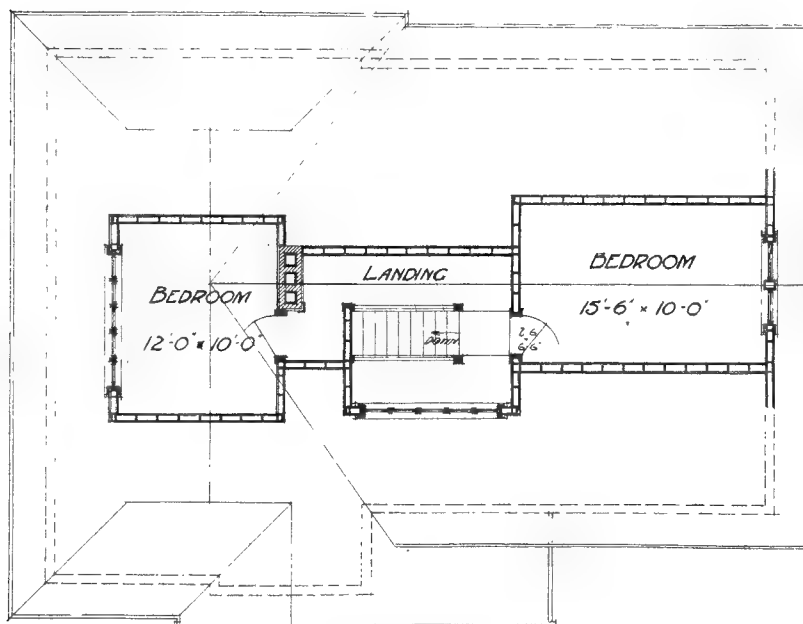
Fig. 22. Many excellent features will be observed in the plans, such as the large living-room with its open fireplace and private verandah; the convenient arrangement and equipment of the kitchen, dining-room, and wash-room; and the office handily placed next the front entrance.

near the back entrance. It provides ample accommodation for fuel, general stores, furnace, soft-water tank, and laundry.

The exterior finish as shown will give a most home-like, substantial, and attractive appearance. The walls up to the bedroom-floor line are covered with shingles in alternate 2-inch and 6-inch courses ; above the

- FARM HOUSE N^o6 -

- SCALE OF FEET -



- ROOF PLAN -

Fig. 23. Two useful bedrooms on the third floor.

bedroom-floor line the walls are panelled with sawn cedar boards in 1- x 6-inch framing-strips. An excellent colour scheme for the outside would be dark-brown stain on the roof, light-brown stain on the cedar panels, and medium-brown stain on the wall shingles and the framing-strips of the cedar panelling. For all sashes, outside doors, and verandah handrails and balusters white would be suitable.

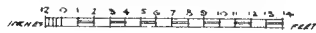
- SCALE OF FEET -



Fig. 24. The house has three stories and a basement, and will accommodate twelve or more persons.

- FARM HOUSE N°6 -

- SCALE OF FEET -



- REAR ELEVATION -

Fig. 26. The walls up to the second floor are covered with shingles in alternate wide and narrow courses; above that the walls are panelled with cedar boards in framing-strips.

FARM HOUSE N^o 6

SCALE OF FEET



DETAIL OF LIVING ROOM FIREPLACE

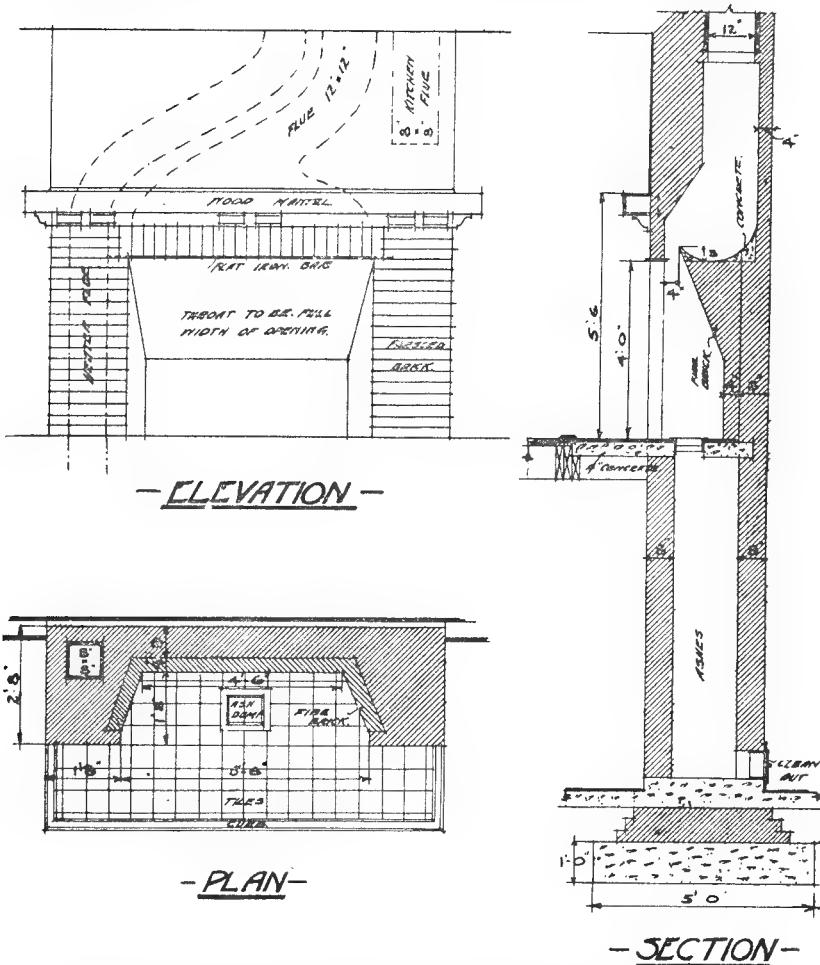


Fig. 27. The section shows the curve and projection in the flue, back of the fireplace, which is intended to prevent back-draughts. It shows also the clean-out in the basement, through which the ashes can be removed.

BILL OF MATERIAL, FARM HOUSE NO. 6.

Framing Lumber.

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
1	6	8	14	56	Beams under ground-floor joists.
1	6	8	10	40	Beams under ground-floor joists.
5	6	8	8	160	Beams under ground-floor joists.
3	6	6	14	126	Post under beams in basement, to cut 6 pieces.
4	2	12	6	48	Centre and wall strings for porch steps.
18	2	10	16	480	Joists for bedroom No. 2.
12	2	10	16	320	Joists for bedroom No. 1, bath-room, and landing.
15	2	10	16	400	Joists for bedroom No. 4.
46	2	10	16	1,227	Joists for attic floor.
13	2	10	14	303	Joists for bedroom No. 3.
3	2	10	14	70	Joists for attic floor.
13	2	10	12	260	Joists for bedroom No. 1, bath-room, and landing.
23	2	10	12	460	Joists for attic floor.
9	2	10	12	180	Joists for man's bedroom.
2	2	10	12	40	Strings for both basement staircases.
2	2	10	10	33	Strings for both basement staircases.
4	2	10	10	67	Joists for man's bedroom.
5	2	10	10	83	Joists for attic floor.
1	2	10	6	10	Joists for bedroom No. 2.
10	2	10	6	100	Basement-stair treads, to cut 20 pieces.
5	2	8	16	107	Joists for hall, office, vestibule, and porch.
8	2	8	14	149	
2	2	8	12	32	
4	2	8	10	53	
14	2	8	16	299	Joists for living-room.
8	2	8	14	149	Joists for living-room.
2	2	8	10	27	Joists for living-room.
15	2	8	16	320	Joists for dining-room.
12	2	8	16	256	Joists for kitchen.
4	2	8	16	85	Hip and valley rafters.
4	2	8	14	75	Basement-door frames in concrete wall.
1	2	8	12	16	
4	2	8	14	75	Hip and valley rafters.
10	2	8	12	160	Joists for wash-room.
9	2	8	10	120	Joists for verandah.
6	2	6	16	96	Bearers under stairs.
5	2	6	14	70	Ridge-pole.
1	2	6	10	10	Ridge-pole.
2	2	6	12	24	Beams, ground-floor hall.
2	2	6	10	20	Beams, ground-floor hall.
2	2	6	10	20	Beams, alcove on first floor.
35	2	4	22	513	Rafters.
20	2	4	18	240	Rafters.
12	2	4	14	112	Rafters.

BILL OF MATERIAL, FARM HOUSE NO. 6—*Continued.**Framing Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
10	2	4	12	80	Rafters.
10	2	4	10	67	Rafters.
20*	2	4	16	213	Rafters of varying length to hips and valleys.
15*	2	4	14	140	
6	2	4	20	80	Studs, outside walls.
14	2	4	18	168	Studs, outside walls.
112	2	4	16	1,195	Studs, outside walls.
12	2	4	14	112	Studs, outside walls.
4	2	4	12	32	Studs, outside walls.
25	2	4	10	167	Studs, outside walls.
160*	2	4	16	1,707	Sills and plates throughout.
26	2	4	14	243	Studs for basement partitions.
12	2	4	14	112	Ceiling-joists for bedroom, attic floor, to cut 24 pieces.
8	2	4	14	75	Struts and braces for roof.
28	2	4	14	261	Extra studs for door openings.
14	2	4	8	75	Extra studs for door openings.
2	2	4	14	19	Bearers under stairs.
114	2	4	10	760	Studs for partitions, ground floor (57 pieces 18' long to cut 114 pieces 9' long will answer for this item).
12	2	4	12	96	Ceiling-joists for attic floor over stairs.
130	2	4	8	693	Studs for partitions, first floor.
30	2	4	8	160	Studs, attic floor.
46	2	4	6	184	Studs, attic floor.
80	2	4	6	320	Extra studs for window openings.
125*	2	2	10	417	Bridging for joists (6' lengths and multiples of 6' will answer best for this item).
10*	2	2	12	40	Framing to beamed ceiling in living-room.
8	1	8	12	64	Corner-boards to external panelling to outside walls.
8	1	7	12	56	
70*	1	4	16	373	Grounds between cedar panels to provide fixing for 1" x 6" strips.
7	1	2	16	19	Door-steps for basement doors.
Total framing lumber				15,419	

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE No. 6—*Continued.**Finish Lumber.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
1	8	10	12	80	Beams for verandah.
3	8	10	10	200	Beams for verandah.
1	8	10	8	53	Beams for verandah.
6	8	8	10	320	Posts for verandah and porches.
1	6	6	12	36	Newel-posts, attic floor.
7	6	6	10	210	Newel and beam posts for ground and first floors.
13	6	6	4	156	Newel-posts and balustrade-posts for verandah and porches.
2	4	8	10	53	Posts for verandah and porches.
2	2	12	16	64	Stair-strings.
2	2	12	12	48	Stair-strings.
5	2	12	6	60	Outside strings to porch steps.
2	2	10	22	73	Barge-boards to large gables moulded on lower edge.
3	2	10	12	60	
3	2	10	8	40	Fixed table under kitchen window.
2	2	8	10	27	Mantelshelf for living-room.
10	1½	10	12	200	Stair-treads.
8	1½	4	10	53	Open slats for porch steps.
15	1½	4	8	80	Open slats for porch steps.
8*	1	12	16	128	Shelving in closets and cupboards.
4	1	12	12	48	Apron linings for staircase openings.
1	1	10	16	13	Frieze for verandah and porch walls.
3	1	10	10	25	Frieze for verandah and porch walls.
1	1	10	14	12	Frieze on front of dormers.
1	1	10	12	10	Frieze on front of dormers.
6	1	10	16	80	Beams for ceiling of living-room, including half-beams at junction of wall and ceiling.
1	1	10	14	12	
2	1	10	12	20	
1	1	10	10	8	
4	1	8	12	32	
4	1	8	10	27	
2	1	6	16	16	
2	1	6	12	12	
2	1	6	10	10	
2	1	2	16	5	
1	1	2	14	2	
2	1	2	12	4	
1	1	2	10	2	
2	1	8	10	13	Fascia at sides of dormer.
2	1	8	8	11	Fascia at sides of dormer.

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

BILL OF MATERIAL, FARM HOUSE NO. 6—*Concluded.**Finish Lumber—Concluded.*

No. of Pcs.	Thick.	Wide.	Long.	Feet Board Measure.	Used for.
	In.	In.	Ft.		
4	1	8	8	21	Barge-boards to small gables.
8*	1	6	16	64	Beams for hall and alcove.
10*	1	6	14	70	Ridge cover-boards.
7	1	6	12	42	Rails and braces for basement doors.
10	1	6	12	60	Stair-risers.
2	1	6	8	8	Frieze at sides of dormers.
2	1	6	6	6	Frieze at sides of dormers.
33	1	6	8	132	Door-casing heads.
8	1	4	14	37	Hat and coat rails in closets and bearers to shelves, etc.
Total finish lumber				2,743	

* **Random lengths** to make up the same total number of lineal feet will answer for these items, and are cheaper than specified lengths.

Short lengths (i.e., under 10 feet) cost less than long, and where they will answer the purpose it pays to specify them. For example, it is cheaper to buy 6- and 8-foot lengths than to cut them out of 12- and 16-foot lengths.

- 4,500 feet, board measure, 1" shiplap for floors.
- 3,000 feet, board measure, 1" roof-boardings.
- 4,000 feet, board measure, 1" shiplap on all outside walls.
- 3,500 feet, board measure, 1" shiplap lining on inside of wall-studs.
- 2,000 feet, board measure, 1" sawn Cedar boards, from 12" to 16" wide (average 14" wide), for panelling on exterior of bedroom floors.
- 1,000 feet, board measure, 1" x 6" sawn strips to form framing on Cedar panelling.
- 650 feet, board measure, 1" V-joint soffit at eaves.
- 250 feet, board measure, 1" V-joint ceiling to verandah and porches.
- 450 feet, board measure, 1" shiplap lining to basement partitions.
- 5,000 feet, board measure, 1" T. and G. flooring.
- 200 feet, board measure, 1" V-joint for basement doors.
- 200 feet, board measure, 1" V-joint for cupboards in kitchen and wash-room.
- 27,000 British Columbia Red Cedar edge-grain shingles for roof (108 bundles).
- 17,000 British Columbia Red Cedar edge-grain shingles for walls (68 bundles).
- 200 bundles lath.
- 28 lineal feet 1" x 10" sawn boards fixed as beams in gables.
- 160 lineal feet 2" hollow mould under verges of shingles.
- 150 lineal feet 1" x 8" fascia at eaves.
- 140 lineal feet 2" x 10" dressed belt course at second-floor level.
- 180 lineal feet 4" weather moulding on belt course at second-floor level.
- 180 lineal feet 2" x 8" dressed belt course, ground-floor level.
- 180 lineal feet 2" x 4" water-table.
- 460 lineal feet 2" x 2" balusters, to cut 3' lengths.
- 66 lineal feet 3" x 4" handrail to porches and steps.

- 30 lineal feet 3" x 4" bottom rail to balustrade.
- 70 lineal feet 2" rebated ridge-roll.
- 200 lineal feet window-stool, 4" wide.
- 250 lineal feet cap-mould to door-casings.
- 540 lineal feet picture-mould.
- 1,000 lineal feet 8" moulded base.
- 1,000 lineal feet 1" quadrant mould.
- 700 lineal feet cap-mould to door and window casings inside.
- 300 lineal feet neck-mould to door casings.
- 800 lineal feet 1" x 4" window-casings inside.
- 400 lineal feet 1½" hollow mould to beam ceiling in living-room and hall.
- 24 lineal feet (12' lengths) 4" handrail to staircases.
- 24 lineal feet (8' lengths) 4" handrail to staircases.
- 14 lineal feet square face mitred on edge of mantelshelf to living-room.
- 100 lineal feet 1" hollow moulding on apron linings, etc.
- 60 lineal feet 1" x 4" string-cap to stairs.
- 150 lineal feet 5" x 5" eave-gutter.
- 2,500 lineal feet ½" x 2" strapping on inside shiplap lining to receive laths.
- 1 shaped finial 4' 6" long, cut out of 6" x 6", for front gable over bath-room.
- 12 shaped brackets, 10" x 6", under box sills to dormer windows.
- 10 brackets for verandah and porches, cut out of 6" x 10", each 4' 6" long.
- 10 moulded brackets for living-room mantel.
- 66 lengths, each 14' long, 1" x 6" door-casing sides.
- 100 balusters, 2" x 3', for staircases.
- 25 rolls of tar or building paper.
- 15 doors, 2' 6" x 6' 6", for bedroom floors; and frames for 5½" wall.
- 12 doors, 2' 8" x 6' 8", for ground floor; and frames for 5½" wall.
- 2 doors, 2' x 6' 8", for coolers; and frames for 5½" wall.
- 1 door, 3' x 6' 8", for back entrance; and frame and sill for 8" wall.
- 1 door, 3' x 6' 8", top panel glazed, for front entrance; and 1 frame, outside width 5', with side lights (fitted with beads for glass).
- 2 pairs folding doors, 3' 6" x 6' 8", for vestibule and living-room verandah, upper panels glazed; and 1 frame with sill for 8" wall, for verandah; and 1 frame, outside width 5' 6", with side lights (fitted with beads for glass), for vestibule.
- 9 sashes, 3 lights, 10" x 14", for basement; outside size 2' 10½" wide by 2' 9" high; and 9 frames and sills for concrete wall.
- 10 sashes, 4 lights, 6" x 8", outside size 1' 4½" wide by 1' 8½" high, for dormers on third floor; and 2 frames, each with 4 mullions, to take 5 sashes, and with sills and outside casings for 8" wall.
- 2 frames with louvre sills and outside casings for coolers in 8" wall, size 1' wide by 3' high.
- 4 sashes, 1 light, 10" x 14", outside size 1' 2" wide by 1' 6" high, for alcove and toilet, first floor; and 2 frames, each to take 2 sashes, with mullions and sills for 8" wall.
- 1 window, 2 lights, 16" x 20", check-rail, outside size 1' 8" wide by 3' 10" high, for hat and coat lobby; and 1 frame with sill and outside casing for 8" wall.
- 2 windows, 2 lights, 24" x 24", check-rail, for east bedroom, attic floor; and 1 mullion frame with sill and outside casing for 8" wall.
- 3 windows, 2 lights, 20" x 30", check-rail, outside size 2' wide by 5' 6" high, and 2 frames with sills for 8" wall, for staircase

- to hired man's bedroom; and 1 frame with mullion and sill for 8" wall, for hired man's bedroom.
- 28 windows, 2 lights, 24" x 30", check-rail; outside size 2' 4" wide by 5' 6" high.
- 4 windows, 2 lights, 32" x 30", check-rail; outside size 3' wide by 5' 6" high.
- 1 window-frame for window, 3' x 5' 6", with sill, for bath-room.
- 1 window-frame for window, 3' x 5' 6", with sill and outside casing, for office.
- 2 window-frames, each with 2 mullions to take 3 windows, centre one 3' x 5' 6", side ones 2' 4" x 5' 6", with sills for 8" wall, for No. 2 bedroom and living-room.
- 2 window-frames, each with 2 mullions to take 3 windows, 2' 4" x 5' 6", with sills and outside casings for 8" wall, for dining-room and No. 4 bedroom.
- 6 window-frames, each with 1 mullion to take 2 windows, 2' 4" x 5' 6", with sills and outside casings for 8" wall, for dining-room, living-room, kitchen, and bedrooms Nos. 2, 3, 4.
- 6 window-frames, each to take 1 window, 2' 4" x 5' 6", with sills and outside casings for 8" wall, for wash-room, toilet, No. 1 bedroom, and hired man's room.

NOTE.—The top sashes of all windows are divided with bars as shown on the elevations.

Hardware.

- 25 lb. 5" spikes.
- 310 lb. 4" common nails for framing.
- 200 lb. 2½" common nails.
- 150 lb. 2½" flooring-nails.
- 75 lb. 2½" finish-nails.
- 50 lb. 2" finish-nails.
- 220 lb. 1¼" shingle-nails, best-quality galvanized, zinc-clad, or cut iron.
- 200 lb. lath-nails.
- 7 pairs 8" T-hinges for basement doors.
- 7 thumb-latches for basement doors.
- 34 pairs door-hinges.
- 1 pair double-action door-hinges.
- 27 sets locks and trim for inside doors.
- 2 sets locks and trim for back door and outside basement door.
- 1 set lock and trim to front door.
- 2 sets lock bolt and trim for folding doors.
- 8 pairs 3 butt-hinges for dormer sashes.
- 8 casement-fasteners.
- 39 sash-fasteners.
- 39 sets lines and weights for sashes.
- 9 pairs 4" T-hinges for basement sashes.
- 9 spring-bolts for basement sashes.
- 7 pairs 4" T-hinges for cupboard doors to kitchen and wash-room.
- 7 cupboard-fasteners.
- 7 dozen hat and coat hooks.
- 39 sash-lifts.
- 150 lineal feet 3" rain-water pipe.
- 7 swan-necks for rain-water pipe, 24" projection.
- 7 shoes for rain-water pipe.
- 164 lineal feet sheet-metal flashing, 18" wide, for chimney, valleys, and vertical sides of dormers.
- 10 lineal feet galvanized angle-bead for plastering (over living-room fireplace).

- 1 metal ash-dump for living-room fireplace.
- 1 iron door and frame for ash clean-out in basement.
- 2 thimbles, 6", for flue-pipes.
- 1 toilet set for ground floor.
- 1 toilet set for second floor.
- 1 bath and 1 basin for bath-room.
- 1 sink for kitchen.
- 1 sink for wash-room.
- 1 set of wash-tubs for basement.
- Plastering material to cover 1,350 superficial yards.
- 30 superficial feet firebrick lining for living-room fireplace.
- 500 facing-brick for living-room fireplace.
- 2 superficial yards hearth-tiles for living-room.
- 4,000 brick for chimney.
- 20 bushels lime for chimney.
- 3 cubic yards of sand.
- 65 cubic yards of gravel for foundation walls and basement floor.
- 350 bags (17½ tons) of cement for foundation walls and basement floor. (This proportion of gravel and cement makes a five-to-one mixture.)

NOTE.—Materials for the following are not included in this bill, though the positions of most of them are indicated on the plans: Heating installation, soft-water tank in basement, water, waste, drainage, and ventilating pipes, book-case in living-room, buffet in dining-room, boarding for concrete cribbing.

SEPTIC TANKS.

The septic tank is regarded in general as the most satisfactory of the various means employed for disposing of farm-house sewage. The principle of the system is, briefly, to discharge the sewage into a water-tight tank—the septic tank—buried below frost-level, where it is acted on and purified by bacteria, and out of which it flows through a drain which allows it to soak away into the earth. The details of the system will be explained more fully in describing the tank shown herein.

A septic tank is intended primarily for use where water is piped in the house to all the sanitary fixtures, such as the bath, toilets, basins, and sinks; although it can be used to take the drainage from only a sink. In any case, whenever one is built, it should be made large enough for future as well as present needs. As far as a water-supply is concerned, it is nearly always practicable to pump it by engine or windmill to an elevated tank, from which it can be delivered to the house and to the barns. The expense is repaid many times over in the greater convenience, saving of labour, and increased protection against fire.

Tanks like the one shown in Fig. 28 are in actual use in the Prairie Provinces to-day, and have been found to give excellent satisfaction. There are two water-tight chambers, separated by a wall. (Sometimes

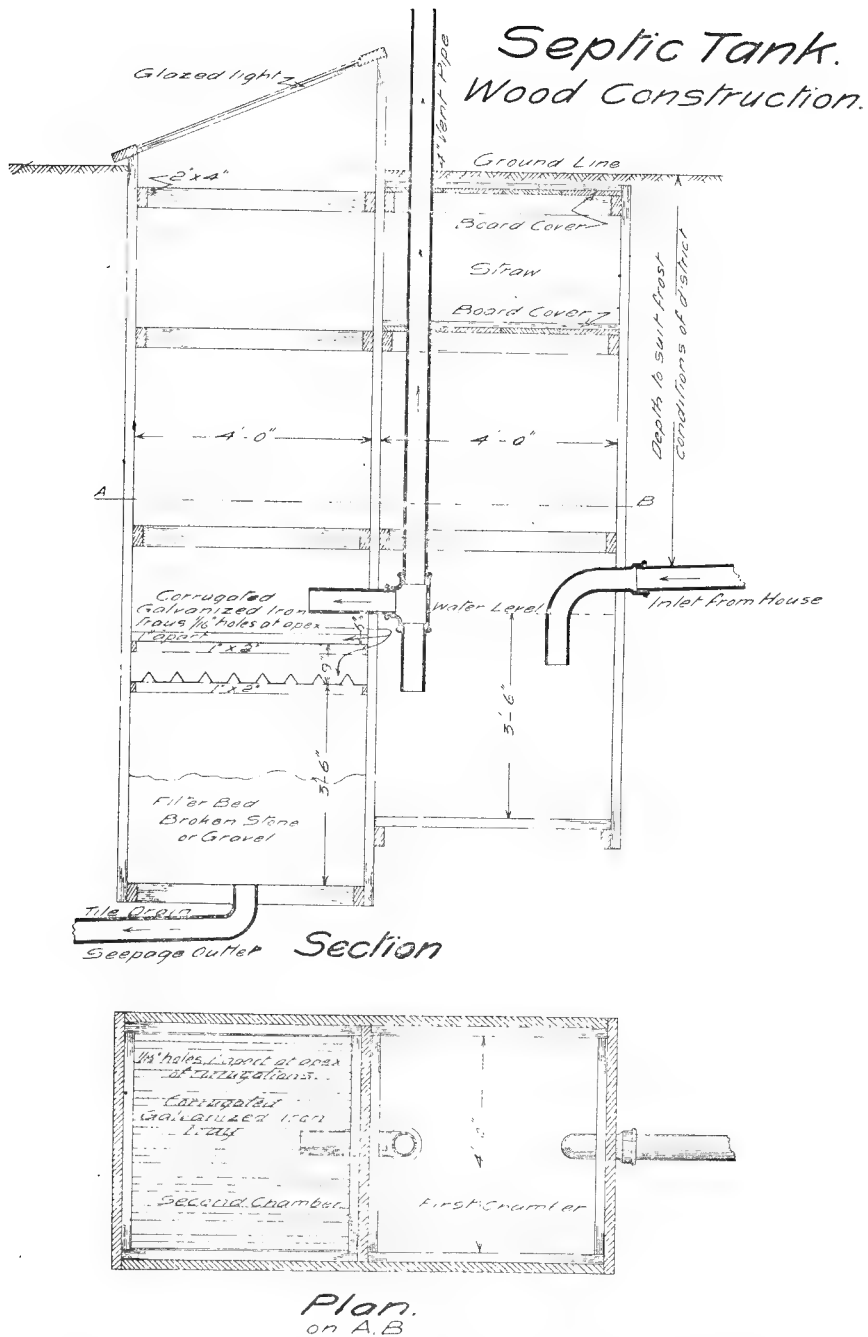


Fig. 28. The septic tank is regarded as the most satisfactory of the various means employed for disposing of farm-house sewage.

single-chamber tanks are used, but two are much better.) If the tank is to receive, as it should, all the house sewage—baths, toilets, and sinks—each chamber should have a capacity of about 60 gallons, or 10 cubic feet (1 cubic foot=6.23 imperial gallons), per person in the family. Thus for a family of six persons each chamber should measure, below its inlet, about 4 feet each way, or 64 cubic feet.

The sewage is carried from the house through a water-tight drain into the first chamber. The solid matter settles to the bottom, where it is gradually broken down and liquefied by bacterial action. The liquids pass through the overflow-pipe—which has a ventilator attached—into the second chamber. Both the inlet and the overflow pipes of the first chamber are provided with elbows, so that they are under the surface of the liquid. This is to prevent breaking or disturbance of the thick scum which forms on the surface, and which protects the bacteria from the air.

In the second chamber are two trays made of corrugated iron with a rim or frame of wood, and placed one above the other, with the corrugations of one running at right angles to those of the other. At the top of the corrugations small holes are punched at intervals of an inch; each tray will thus hold liquid up to the level of the holes, giving an opportunity for bacteria and the air to further purify it. The bottom part of the second chamber is filled with a filter-bed of broken brick, stone, clinker, or gravel; and under this is the outlet leading into a drain of agricultural tile pipe.

The liquid coming through the overflow-pipe from the first chamber falls on to the upper tray, drips through to the lower one, thence to the filter-bed, and through it into the tile drain, from which it soaks away into the earth.

In some forms of septic tanks the second chamber has no trays and filter-beds, and the outlet is equipped with automatic valve siphons, which operate only when the chamber fills to a certain height. The advantages of this are that the liquid discharges intermittently, which gives the earth a rest; and it has a volume sufficient to fill the tile drain, so that it is distributed evenly the whole length. The disadvantages are that the valves add to the cost, and when they get out of order, as they sometimes do, it is not easy or pleasant to fix them.

The outlet tile drain should be laid in a trench, with a very slight fall, about 1 inch in 50 feet, and the pipes surrounded by 8 to 12 inches of broken stone or gravel. The distance it should run from

the tank will vary with the nature of the soil and the lay of the land. If plenty of fall in the shape of a side-hill or slope near by is available, the tank need be only a few feet in from the slope, where the drain will emerge and the effluent will seep away. In level land the drain will have to be a blind one, and should then be from 50 feet in a porous soil to 150 feet in a compact soil. It is a good plan in either case to lay several smaller branch or lateral drains from each side of the main drain to thoroughly distribute the sewage.

The construction of the tank is explained by the drawings and by the bill of material, which follows. It is advisable to use a naturally durable wood, such as Western Red Cedar, or else creosoted wood; though it is a well-known fact that sound wood of any kind, when buried in the ground or immersed in water, so that air is entirely excluded, will last indefinitely.

BILL OF MATERIAL FOR SEPTIC TANK.

- 32 pieces 2" x 4" x 4' for ledges.
- 8 pieces 1" x 2" x 4' for bearers under iron trays.
- 900 feet, board measure, 2" T. and G. plank for sides to both chambers and bottom to first chamber.
- 50 feet, board measure, 1" matched boarding for 2 covers to first chamber.
- 1 glazed cover to second chamber; outside size 4' 6" x 5'.
- 2 galvanized-iron trays crimped or corrugated as shown on plans; outside size 3' 11½" x 3' 11½".
- 25 lb. 4" common nails.
- 5 lb. 2½" common nails.
- 1 cubic yard broken brick, stone, or gravel for filter-bed.

NOTE.—The quantity of pipes necessary will vary in each case, and must therefore be estimated individually. The drain from the house may be iron, or glazed stoneware with cemented joints, or machine-banded wood-stave pipe. The pipes in the tank itself, including the inlet, ventilator, overflow, and outlet, should be of iron. The drain leading from the tank should be of agricultural tile. A diameter of 4 inches is suitable for all the pipes in a tank of this size.

THE FARM LAY-OUT.

The factory or plant that is most conveniently laid out and equipped for its work is the one which, other things being equal, will operate at the lowest cost, with the least work, and will yield the most profit and satisfaction. The same is true of farms. It is important that each farm building should be as convenient as possible to work in; it is equally important that the farm buildings and fields—all parts of the farm plant, in short—should be arranged as conveniently as possible in relation to one another. Careful grouping of the buildings will reduce

the work, and make it possible to get along with less help or to work shorter hours. Careless grouping will do the opposite. Almost any kind of a plan is better than none at all, even though it is hardly possible to make one that could not be improved on after a few years' experience with it.

Only very general suggestions can be given in regard to planning the lay-out, because every farm represents a separate problem, for which

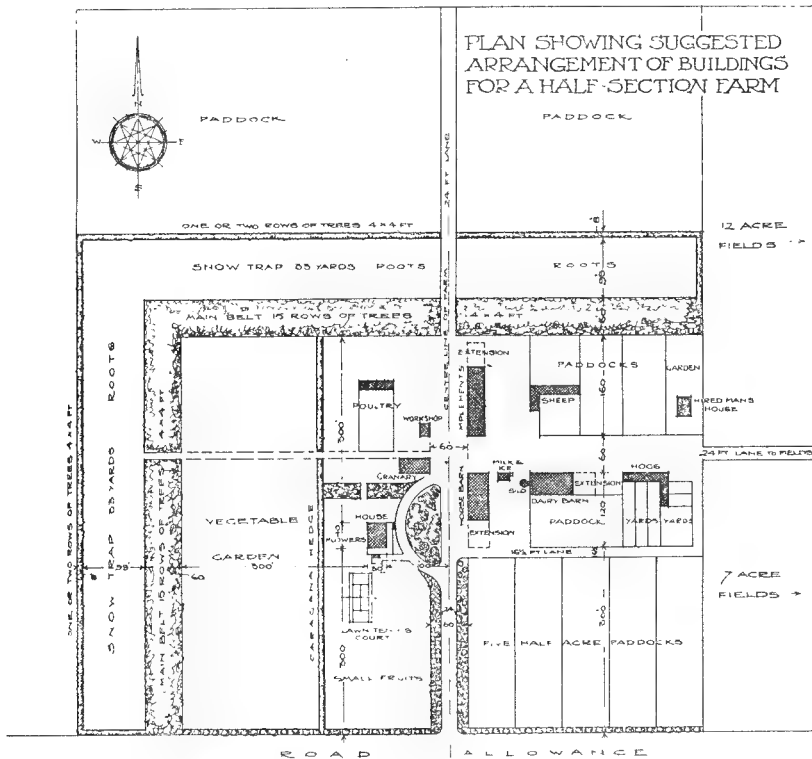


Fig. 29. A well-arranged and attractive farm lay-out.

the details must be worked out individually. The best time to plan the lay-out is, of course, at the beginning, before any permanent buildings are erected, although the arrangement of an established farm can often be improved a good deal. The plan should not only consider present needs, but should be optimistic and provide for what it is hoped the farm will be in future.

The location of the house, which should be considered first, has already been discussed in the first part of this bulletin. Some of the points to be kept in mind in regard to the other buildings are: To have the ice and milk house convenient both to the dairy-barn and the farmhouse; the silo next the dairy-barn; the horse-barn and the implement-shed not too far apart; water and yards or paddocks provided for all the live-stock buildings, or within easy reach of them. In placing the buildings, sufficient room should always be left to allow for future enlargement, and also to decrease fire risk.

An example of a well-arranged and attractive farm lay-out is shown in Fig. 29. The house is 300 feet back from the road; this distance might well be increased to advantage. In front of the house is a lawn, and in front of that again the small fruits or garden. The main avenue is placed about the centre of the farm. This leaves room for three 7-acre fields to the east of the paddocks. The buildings are arranged in convenient relation to one another, and an open space is left around each one. The paddocks and yards are handy to the barns. On the north and west sides are shown wind-breaks formed of double rows of trees, with a snow-trap 33 yards wide between the rows.

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HON. WILLIAM R. ROSS, K.C., Minister of Lands.

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A building with wooden walls and a wooden shingle roof is **warm** in winter and **cool** in summer and **dry** all the time.

Wood is therefore particularly **suitable** for **houses** and **barns**.

Wood is very **durable** in all kinds of building work **above ground**.

It will give **generations** of **service**, especially if well painted where exposed to the weather.

For use in **contact** with the **soil**, as mud-sills or fence-posts, a preservative should be applied or a specially resistant wood such as Western Red Cedar should be used.

Woods to Use.

Grown in British Columbia---Manufactured in British Columbia.

Woods differ in their qualities of strength, hardness, and durability. Certain kinds are particularly suited for certain uses. It is important to use the right wood in the right place.

(1.) **General Building Work.**—Douglas Fir, Western Larch, Western Hemlock, Western Soft Pine, Mountain and Coast Spruce, Western White Pine.

(2.) **Framing and Dimension Timber, Posts, Beams, Rafters, Studs, Sills, Plates, Joists.**—Light construction: Same as No. 1. Heavy construction: Douglas Fir, Western Larch, Western Hemlock.

(3.) **Rough Lumber or Sheathing not exposed to Weather (Inside Work or covered by Siding or Lath and Plaster).**—Any British Columbia wood.

(4.) **Rough Outside Sheathing exposed to Weather (Outbuildings, etc.).**—Douglas Fir, Western Larch, Western Soft Pine, Western Red Cedar, Coast and Mountain Spruce, Western White Pine.

(5.) **Siding.**—Western Red Cedar, Douglas Fir, Western Soft Pine, Mountain and Coast Spruce, Western Larch.

(6.) **Roofing.**—Western Red Cedar edge-grain shingles, with galvanized, zinc-clad, zinc, or copper nails.

(7.) **Flooring, Stair Stepping, Sidewalks.**—Douglas Fir, Western Larch, Western Hemlock. Use edge-grain stock for hardest wear.

(8.) **Interior Finish, Panelling, Trim.**—Douglas Fir, solid or veneer (a beautiful grain, superior to most hardwoods), Western Larch, Western Soft Pine, Western White Pine.

(9.) **Doors, Window-sash.**—Douglas Fir, Western Red Cedar, Western Larch, Western Soft Pine, Western White Pine.

(10.) **Fence Pickets.**—Douglas Fir, Western Larch, Western Red Cedar, Western Soft Pine.

(11.) **Piling, Cribbing.**—Douglas Fir, Western Larch.

(12.) **Silos, Tanks.**—Douglas Fir, Western Larch, Western Red Cedar, Western Soft Pine.

(13.) **Ground-sills, Skids, Fence-posts, Poles, Conduits, Drains, and wherever Wood is in Contact with the Ground.**—Western Red Cedar or creosoted wood. Use Douglas Fir or Western Larch where strength and hardness are essential.

(14.) **Furniture, Tables, Settees, etc.**—Douglas Fir, Western Soft Pine, Coast or Mountain Spruce, Western White Pine, Western Red Cedar.

NOTE.—Western Hemlock is superior in every way to Eastern Hemlock—an entirely different tree—and should not be confused with it.

BRITISH COLUMBIA FOREST SERVICE BULLETINS.

Farm Buildings Series.

1. Combination or General Purpose Barns for Prairie Farms.
2. Dairy Barns, Milk and Ice Houses for Prairie Farms.
3. Beef Cattle Barns for Prairie Farms.
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5. Sheep Barns for Prairie Farms.
6. Piggeries and Smokehouses for Prairie Farms.
7. Poultry Houses for Prairie Farms.
8. Implement Sheds and Granaries for Prairie Farms.
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10. Farm Houses for Prairie Farms.

Timber Series.

12. How to finish British Columbia Woods.
14. British Columbia Douglas Fir Dimension Timber.
15. British Columbia Western Larch.
16. British Columbia Western Soft Pine.

The above bulletins, and also further information concerning British Columbia timber, are obtainable **free** from the Chief Forester, Victoria, B.C. Of the Timber Series, Bulletin No. 12, "How to Finish British Columbia Woods," is of special interest to home builders and owners, carpenters, architects, and building contractors.

OTHER PUBLICATIONS.

Many publications and much useful information on farming and related subjects can be obtained on request from the various Government Public Service organizations of Canada, listed below.

(1.) **Alberta:**

Department of Agriculture, Edmonton.
University of Alberta, Edmonton.
Agricultural Schools at Olds, Vermilion, and Lethbridge.
Dominion Experimental Stations at Lethbridge, Lacombe, and Fort Vermilion.

(2.) **British Columbia:**

Department of Agriculture, Victoria, B.C.
Dominion Experimental Farm, Agassiz, and Experimental Stations at Sidney, Salmon Arm, Summerland, and Invermere.

(3.) **Dominion:**

Department of Agriculture, Ottawa, Ont.
Dominion Forestry Branch, Ottawa, Ont.

(4.) **Manitoba:**

Department of Agriculture, Winnipeg.
Manitoba Agricultural College, Winnipeg.
Dominion Experimental Farm, Brandon, and Experimental Station at Morden.

(5.) **Saskatchewan:**

Department of Agriculture, Regina.
University of Saskatchewan, Saskatoon.
Dominion Experimental Farm, Indian Head; Forestry Station, Indian Head; and Experimental Stations at Scott and Rosthern.

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